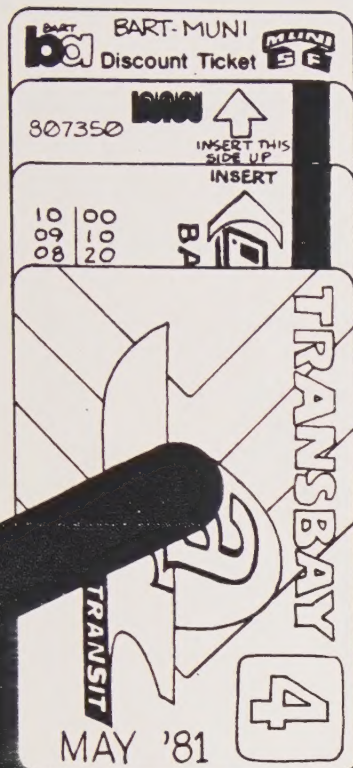


Designing and Implementing Multi-Operator Transit Passes in the San Francisco Bay Area



Volume I of the Final Report on the Joint Fare Prepayment Demonstration Design Project

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Joel Markowitz, Henry Dittmar

6. Performing Organization Name and Address

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Hotel Claremont
Berkeley, CA 94705

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This is Volume I of the 3-volume final report on a project to develop joint
transit fares among several independent transit agencies in the San Francisco Bay Area.
This volume covers the design of the selected alternative (a joint monthly pass among
the three largest transit systems) and includes the institutional and coordination
issues affecting multi-agency activities. Problems arising in implementing the joint
arrangements are analyzed and suggestions are offered on improving prospects for pro-
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- II - Describing the Market for Multi-Operator Transit Passes in the San
Francisco Bay Area. Results of surveys of buyers of separate system
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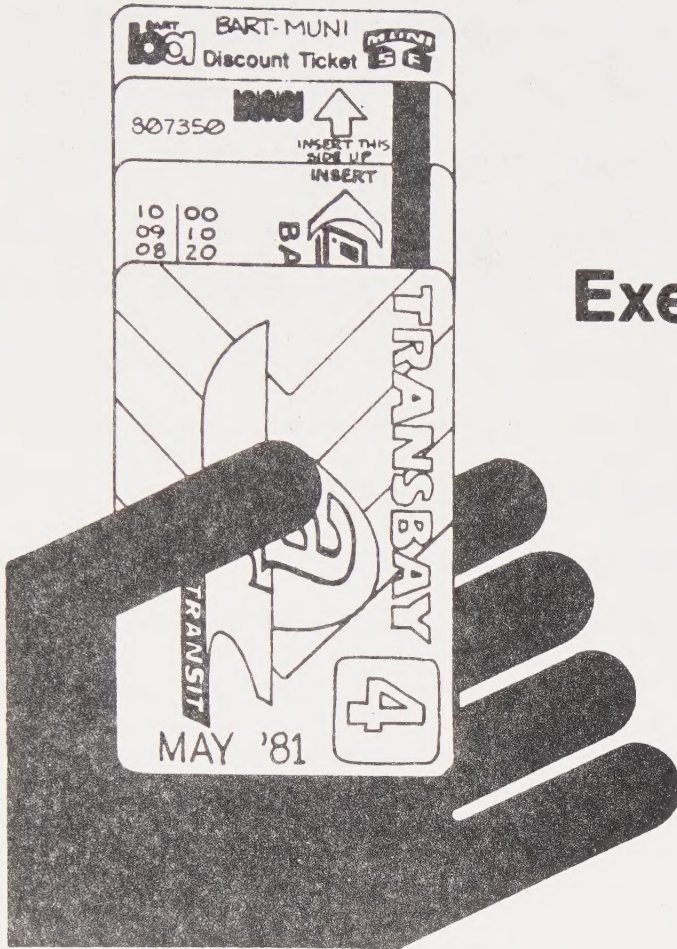
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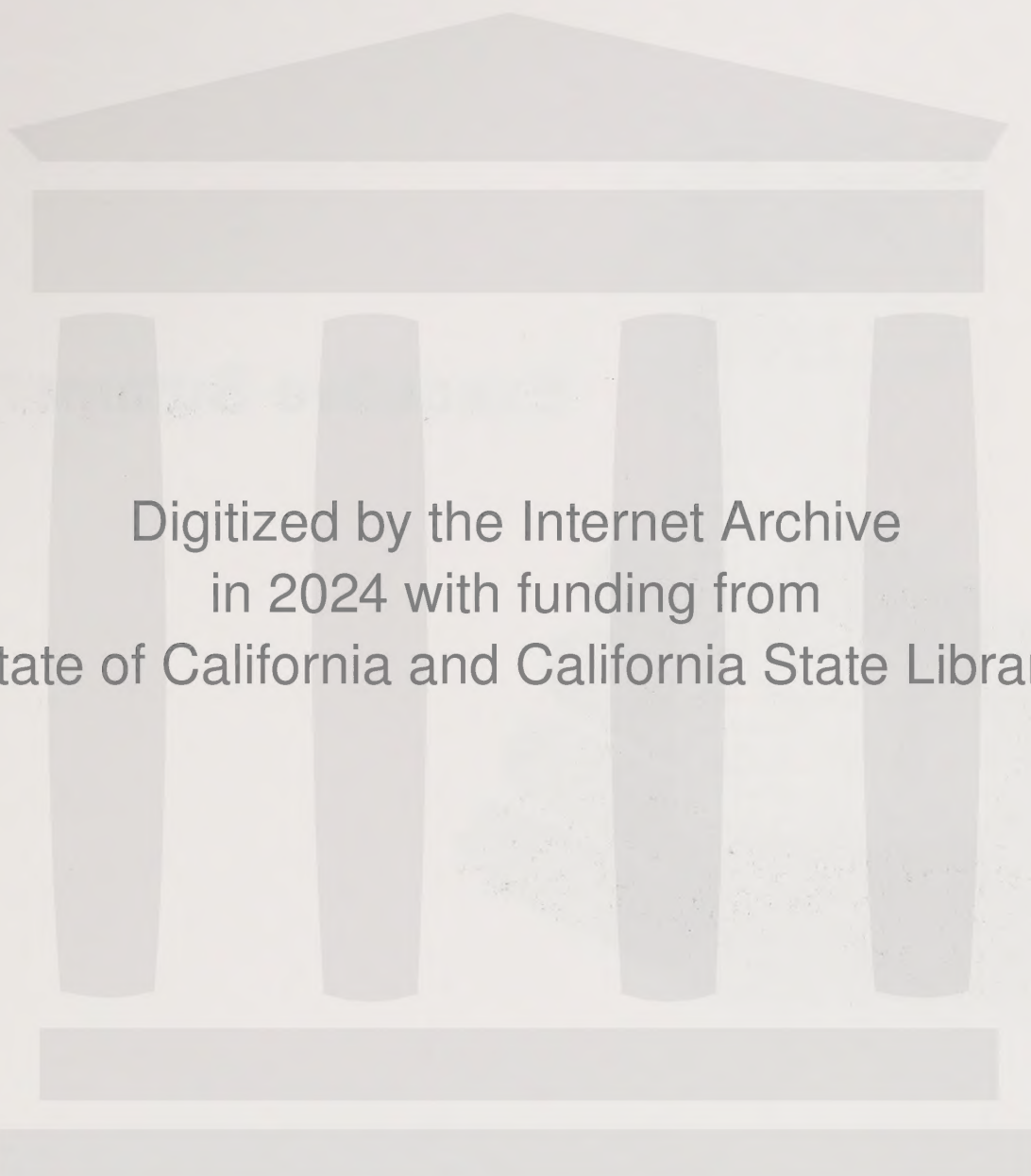
The authors wish to express their appreciation to the many individuals who were instrumental in the preparation of this report. Bruce Bernhard and Dave Ring of the San Francisco Public Utilities Commission and Mike Mills of AC Transit were most helpful with the design of the instrument for the survey of monthly pass users. Barbara Wilkie and Sharon Gottlieb provided untiring assistance in the coding and keypunching aspects of the survey process. Kay Bell and Shirley Rodenborn set up the SPSS file for the survey. Mollie O'Neill, publications coordinator at MTC, and Shelley Roberts were both patient and efficient in dealing with the various drafts of this report.

TABLE OF CONTENTS

	<u>Page</u>
Executive Summary	i
CHAPTER 1 - INTRODUCTION	1
Project Scope	1
Final Report Organization	2
CHAPTER 2 - TRANSIT IN THE BAY AREA	4
Transit Services	4
Transit Fares and Passes	9
Organizational Setting	11
Information Sources	14
CHAPTER 3 - BACKGROUND FOR THE PROJECT	16
Decision-making Environment	16
Metropolitan Transportation Commission	16
Regional Transit Association	17
Transit Operator Coordinating Council	20
The Mandates to Coordinate Transit	25
Project History	34
CHAPTER 4 - DESIGN FOR THE JOINT AC-BART-MUNI PASSES	41
Narrowing the Focus	41
Organizing the Approach	41
Fare Structure and Pricing	48
Financial Management	54
Monitoring	55
Technology	55
CHAPTER 5 - THE CASE FOR COORDINATION	58
CHAPTER 6 - IMPLEMENTATION ISSUES	62
How the Technical Committee Works	62
Analyzing Implementation Problems	65
Keeping the Project on Track	70
Conclusions	79
REFERENCES	81
APPENDICES	
A: Glossary of Abbreviations	
B: Survey of Pass Programs in Large U.S. Transit Systems	
C: MTC Transit Coordination Policy	



Executive Summary



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EXECUTIVE SUMMARY

Public transit service in the San Francisco Bay Area, as in many other U.S. metropolitan areas, is provided by more than one agency. For travelers who must use more than one agency's services to complete a trip, this can present confusion and inconvenience in having to learn and cope with several independent fare structures. Because there are seven major publicly owned or operated transit systems in the Bay Area, the problems of fare coordination in the region are perhaps more exaggerated than elsewhere. For this reason, both the regional transportation planning agency (the Metropolitan Transportation Commission -- MTC) and the federal Urban Mass Transportation Administration (UMTA) were interested in investigating how a coordinated joint fare among several transit agencies might be achieved. The medium of fare prepayment (tickets or passes) was selected as the focus of study. The objectives of prepayment are to reduce the patrons' transactions costs of multiple payments in a single trip and to gain operational improvements due to speedier boarding. However, the more general question was how to reach joint agreements among the many agencies.

The project was originally intended to design a joint fare prepayment demonstration which would then be implemented by the operating agencies themselves in a subsequent, Federally supported demonstration phase. However, a rapid succession of events from the time of the initial project planning discussions to the present has considerably reoriented the approach. Among the many external factors influencing the development of the project were passage of several state laws affecting both transit finance and operator-MTC relationships, and subsequent MTC actions to implement those mandates. A very long history of concern for coordination among the several agencies (some studies date back twenty-five years) was finally catalyzed by a crisis in

transit financing that required concerted action by the three largest transit agencies (AC Transit, BART and San Francisco Muni) to raise fares in 1980. The identification of substantial local funds (from the sales tax) to pursue joint passes among these three agencies obviated the need to independently press the UMTA demonstration. Instead, activities under the project grant were re-oriented to support the local effort by those systems.

Institutional Considerations

The need to concentrate on institutional incentives and constraints for fare coordination further focused the project. Several significant factors were identified. While some may seem obvious, they need to be dealt with explicitly to achieve coordination.

1. Autonomy -- The agencies are independent political entities, even though their boundaries may overlap. Therefore, joint fares must be accomplished within the constraints of each agency's fare setting procedures and authority.
2. Equity -- Joint fares imply shared costs in providing the new fare instrument and the need to split revenues equitably. Each agency must establish that it will not be harmed by any such arrangements and that its constituents will benefit.
3. Operational Feasibility -- The joint fare arrangement cannot impose unusual burdens on standard operational practices and should, if possible, fit into the individual fare structures and collection procedures.
4. Technological feasibility -- The joint arrangement must fit within the technical constraints of existing equipment, or at least not call for technological changes beyond the state of the art.
5. Marketability -- The final arrangement must provide an attractive product that a significant share of riders would find beneficial, that is easy to explain to that market, and that is readily available.

MTC staff worked closely with a committee of staff members from the three participating transit agencies to develop the strategy for the investigation into alternatives and to structure the project into discrete sub-tasks. Because of the political sensitivity of fares, the actual development of the joint fares was to be entirely handled by the staff committee so that each agency had full control over its participation. While the project consultant made the initial feasibility study, the agency staff committee assumed all responsibility for further investigation into and selection of alternatives. While it was not articulated, there was an apparent distrust of hiring an outside consulting firm to accomplish the work, perhaps reflecting disappointment over the years with such firms' work on these questions, or simply suspicion that such a firm could not be as sensitive to each agency's needs as its own staff could be.

The result of the institutional setting and the factors enumerated above is that the joint fare plan now taking shape is one of incremental adjustment and accommodation, rather than a radical departure from past practices. For instance, the present bus system monthly passes are being retained in their current form, but augmented to allow multi-system use, and the magnetic stored-fare card used by the BART rail system is being built upon to accept new multi-system coding. On the horizon, however, is what may be the greatest change in local transit fare setting in the region's history. The managers of the three transit agencies have agreed, in principle, that the next fare increases needed to maintain financial solvency, likely now for 1982-83, will be considered within a coordinated, regional fare structure. This structure would be the basis for pricing the joint passes.

It would be tempting to say that the project could claim credit for the apparent breakthrough, but this is not entirely the case. First, after participating in a year-long project to develop a multi-year financial plan in which

fare revenues played an important role, and the experience in 1980 of actually increasing fares, each agency now recognizes the need for more frequent fare increases in the future. Fare increases as a natural part of financial planning, rather than an unfortunate and infrequent aberration, helped set the stage for concerted action. Second, MTC's action in 1980 to tie fare coordination more closely to allocations of transit operating funds convinced the agencies that, after years of making policy statements, MTC was finally prepared to use its discretionary powers to influence their decisions. After prolonged debate, this led the transit agencies to realize that they stood to gain by working together voluntarily, and forestalling possibly less palatable unilateral action by MTC or the state.

Joint Fare Alternatives

Based on the desire to minimize disruption to existing fare structures and collection methods, the three involved transit agencies agreed quickly to narrow the focus of the joint fares to monthly passes, for full-fare patrons only, in the largest identifiable markets. The structure for the joint fare was to be based on some combination of the existing arrangements -- San Francisco Muni has a flat fare, AC Transit a fixed zone fare, and BART a more finely graduated distance-based fare. Whatever structure is eventually chosen for the regional joint fare, it will represent a compromise in which one or more agencies will have to move towards the others' methods, but in which the result will be minimally disruptive to at least one of them.

The first joint pass to be introduced illustrates this approach. In September 1981, AC Transit began sale of a joint monthly pass allowing unlimited rides on AC local and transbay lines and on all San Francisco Muni services. The existing AC Transbay Pass is used with a San Francisco sticker attached at the time of purchase. The AC bus drivers now are faced with a

slight variation on the pass they normally see, and Muni drivers had to learn to look for their agency's symbol on the joint pass. On the other hand, sales are handled exclusively by AC personnel, who act, in effect, as Muni sales agents for the new stickers. In the absence of a unified regional fare structure, the price agreed upon by the two agencies was the sum of their existing passes, minus a \$2 promotional discount. Any temporary revenue loss is to be covered by local funds set aside by MTC for the regional pass project.

In January 1982, the three general managers endorsed the principle of a value-based monthly pass fare structure for the eventual multi-operator regional pass. Under this approach, a distance-based fare, regardless of operator used, would be the basis for the joint pass price. The pass would be read by BART's automatic faregates to allow any trip up to a predetermined trip value. For example, a pass marked \$1.25 would allow unlimited BART trips of \$1.25 value or less during the specified month. The dollar value would also be translated into the corresponding number of AC Transit transbay zones. At present, for instance, \$1.25 is the fare for AC transbay trips from Zone 2 to downtown San Francisco. If such a pass were in existence today, a \$1.25 value-based joint pass would allow unlimited trips on BART up to the value, on any local AC or Muni route, on any East Bay AC express route in Zones 1 or 2 and on any AC transbay route in Zones 1 or 2. The pass would work like a normal BART farecard in a BART gate and be visually verified by AC and Muni operators like their current system passes. The operator-MTC staff committee has now been assigned to further develop this alternative.

San Francisco is now considering a fare increase to take effect in spring 1982. As this report is being submitted, discussions are being held at both staff and management levels among the three operators and MTC on how to coordinate expected fare increases. Of immediate concern is the price of a San Francisco pass that would be good for both BART and Muni service. Technical

work is already well underway within the locally funded project to modify BART gates in San Francisco stations to accept such a pass in late 1982. BART and Muni staff are working toward a revenue-sharing agreement by April 1982 for that joint pass.

It was not possible within the project schedule to achieve final agreement among the agencies on the exact nature of the eventual regional joint fare structure, although the endorsement of the value-based approach itself represents significant progress. The questions of distance charges and fare level and relationships among separate system passes have to be deferred until the present uncertainties in state and federal funding for transit are resolved and reliable projections of financial needs can be made. These decisions fall within the purview of a separate project mandated by the state to develop long-term financial planning for the three agencies. The transit agency general managers have agreed, however, that the joint fare staff committee will have lead responsibility in recommending a coordinated fare structure for consideration by the financial planning project.

The Market for Joint Passes

The bulk of the project resources was directed at identifying the potential market for joint fare prepayment and describing the nature of that market in some detail.

The market that was identified represents about 10% of total daily transit trips in the region and comprises most interoperator travel in the central urbanized area. The market was further probed by a 1980 survey of AC Transit and San Francisco Muni monthly pass buyers and a 1981 survey of buyers of the new AC-Muni joint pass. The surveys found that the market can really be subdivided into the long-haul, higher income, commute-only user, and the local,

lower-income, transit-dependent user. Different methods of distribution, pricing and promotion must be directed at these distinct submarkets.

The pass user surveys focused on transit use and traveler characteristics. Results indicated that monthly pass users take at least 40 trips a month and generally more, implying almost daily use for commuting. The amount of additional trips taken varied by the particular pass. This suggests that the passes can be priced close to the actual number of daily commuting trips, and that the current levels of pass discounts may not be needed.

The 1980 survey also found that a significant number of current pass users now buy more than one system's pass and would be interested in buying a joint pass. The first joint pass to be developed was one meeting these needs -- a simple combination of the two existing AC Transit and San Francisco passes.

Pass users suggested a variety of potential distribution methods that would make joint pass buying more convenient. A major unfinished part of the investigation is whether pass vending equipment would be desirable to make the system more self-service oriented and less dependent on transit agency personnel.

Implementing Joint Passes

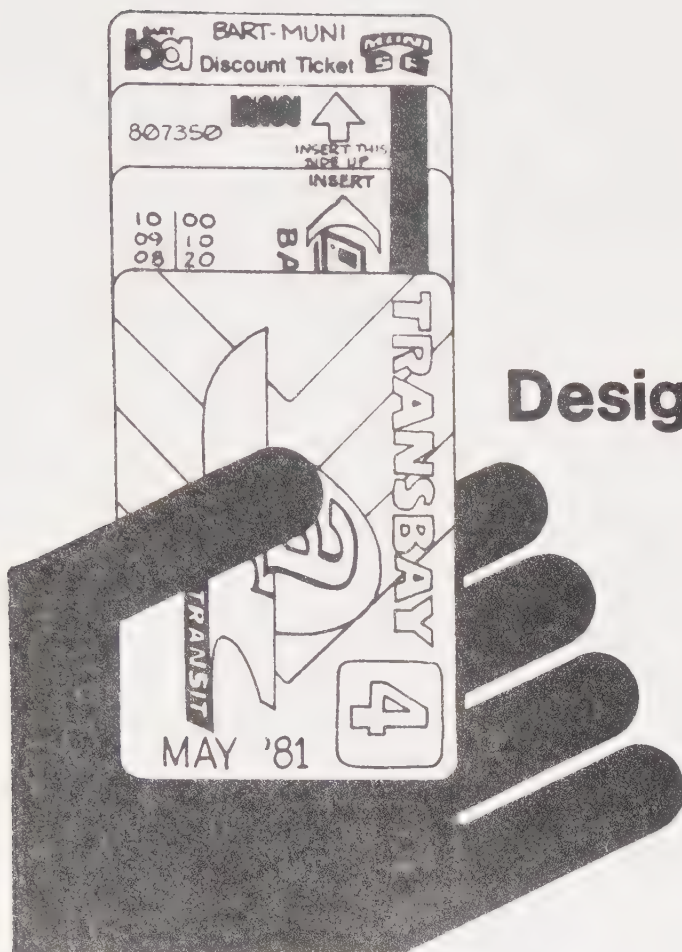
The major implementation issues in joint passes are those that are typical with multiple organizations and changing actors within these organizations. Differences in perspective are compounded by discontinuities in committee membership, differing perceptions of the extent (or lack) of prior agreements, and relatively low priority within each agency for this type of activity. The result is sporadic rather than concentrated efforts by individuals who have a variety of other pressures on their time and attention.

In this kind of environment, it is especially important to build in a selfcorrecting structure or work plan that keeps track of progress in discrete, attainable work tasks and allows continuous recording of agreements and reconsideration of those agreements as work moves ahead. The layers of decision-making are fluid and the principal actors must respond to frequent shifts in their external environments, progress is inevitably slow and non-linear. The project staff developed an approach that should help guide the further work in developing, implementing and monitoring the joint passes. The approach included specification of objectives, criteria, alternatives, tasks and leading issues to both focus committee discussions and provide a framework for keeping track of the many elements of the project.

The major unresolved implementation issue is the building of political support toward the intended coordinated fare increases. At this time, there is a discussion forum among representatives of the elected and appointed policy boards of MTC and the three largest transit agencies. However, there is no mechanism for making binding, joint decisions. Therefore, there exists no way for the policy boards to jointly agree on a fare increase. Instead, the agency staff will have to find ways to bring their boards along in the decision process on parallel, but separate, paths.

Two aspects of the project need further elaboration to provide useful information for these decisions: administrative costs of passes and revenue implications. Both are good candidates for further research.

There is always very little in a case study that can be unequivocally generalized to other areas and circumstances. The major lesson is simply that multi-agency action is always more difficult than might be expected, even when general objectives are agreed upon, all actors are at the local level, and ample resources are provided. These factors, while necessary, are not sufficient for success. The constraints on each agency's decision environment must be explicitly acknowledged and incorporated for real progress to be made.



Designing a Joint Pass

CHAPTER 1

INTRODUCTION

PROJECT SCOPE

This is Volume I of the final report for the Joint Fare Prepayment Demonstration Design Project, carried out by the Metropolitan Transportation Commission of the San Francisco Bay Area under a grant from the U.S. Urban Mass Transportation Administration's Office of Service and Methods Demonstrations (CA-06-0137). Fare prepayment (such as tickets or passes) was chosen as a mechanism for achieving a regionally coordinated transit fare structure. The project was intended to identify, evaluate and select alternatives for fare prepayment arrangements among several of the transit systems operating in the region. The project work scope included:

- 1) identifying the market for prepayment,
- 2) identifying and evaluating alternative prepayment methods,
- 3) developing pricing policies and financial management methods,
- 4) developing distribution, promotion, and monitoring plans.

The final product was to have been the definition of a specific prepayment plan for implementation in a subsequent demonstration grant. The design phase was budgeted for nine months at \$50,000.

While the project finished within budget, it took nearly three times as long as expected and, even then, did not achieve the comprehensive goals set out for it initially. This report therefore serves the multiple purposes of reporting what was accomplished, recommending further needed work and analyzing why the project has taken the shape that it has now. Although the specific institutional setting in the Bay Area is unique, there are lessons to be learned about fare prepayment and multi-agency coordination that may be instructive elsewhere.

FINAL REPORT ORGANIZATION

The remainder of this volume provides general information about transit in the region, the organizations involved in the project, project organization and execution, how the joint pass design proceeded and how the overall implementation process worked.

Volume II details the analysis of the market for joint fare prepayment, including results of surveys of buyers of the two most well established separate system monthly passes and buyers of the first joint pass to be introduced.

Volume III is the initial research report prepared by the project's consultant, the University of California, Berkeley, Institute for Transportation Studies, on the Feasibility of Coordinated Fares.



CHAPTER 2

TRANSIT IN THE BAY AREA

TRANSIT SERVICES

Six major public transit agencies provide service in the San Francisco Bay Area. Each is independent, and sets fares in response to its constituency and its policy board. Each of the operators is governed by an elected board, although in some cases the service areas and constituencies overlap (San Franciscans, for example, are represented by three transit agency boards -- BART, Golden Gate, and Muni). A high level of informal cooperation exists among these operators, but formal integration of fares had not been attempted before.

In addition to these six major public systems, the Southern Pacific commuter rail service from San Jose (in Santa Clara County) to downtown San Francisco is now operated under contract to the California State Department of Transportation (Caltrans), with operating funds provided by federal and state sources and by the three counties served (Santa Clara, San Mateo and San Francisco).

The table on the following page shows the population of the counties served by these systems. Total annual revenue patronage for the systems for recent fiscal years are is below:

Table 2-1
Annual Revenue Patronage
(000's)

	<u>FY 1977-8</u>	<u>FY 1978-9</u>	<u>FY 1979-80</u>	<u>FY 1980-81 (est.)</u>
AC	45,742*	58,096	61,013	64,880
BART	38,665	38,358	34,482*	45,200
GG Bus	8,514	8,863	9,360	10,182
GG Ferry	2,142	2,535	1,094	2,016
S.F. Muni	120,215	124,000	(not available)	
SamTrans	9,456	11,485	14,959	16,335
SCCTD	11,641	15,327	21,231	24,800

* Includes effect of work stoppage

Table 2-2

SERVICE AREA POPULATION

County (5)	Population		Served By These Operators:						
	1970 Census	1980 Census	AC	BART	Golden Gate	S.F. MUNI	SamTrans	Santa Clara	Southern Pacific
Alameda	1,071,446	1,105,379	X	X			(1)	(2)	
Contra Costa	556,116	657,252	X	X					
San Francisco	715,674	678,974	X	X	X	X	X		X
Marin	208,652	222,952			X				
Sonoma	204,885	299,827			X				
San Mateo	557,361	588,164		(6)			X	(3)	X
Santa Clara	<u>1,065,313</u>	<u>1,295,071</u>	(7)				(4)	X	X
	4,379,447	4,847,619							

- Notes: (1) SamTrans operates one route across San Francisco Bay on the San Mateo-Hayward Bridge to the Hayward BART Station in Alameda County.
- (2) Santa Clara operates one express route from San Jose to the Fremont BART Station in Alameda County.
- (3) Santa Clara operates some routes to and over the county line into San Mateo County, connecting with SamTrans.
- (4) SamTrans operates some routes over the county line into Santa Clara County.
- (5) Napa and Solano Counties are not directly served by these major transit operators, although they are within the nine-county definition of the Bay Area.
- (6) SamTrans operates several routes to the Daly City BART station, the western terminus of the BART system, which is in San Mateo County, just across the boundary from San Francisco.
- (7) AC operates one local route to connect with Santa Clara; free transfer at Dixon Road.

Following is a brief description of each of the six major public transit operators.

Alameda-Contra Costa Transit (AC Transit)

AC Transit, the first multi-county transit district established in California, took over the operation of the private Key System in 1960. AC provides most of the bus transit in the heavily urbanized strip between the San Francisco Bay and the Oakland-Berkeley hills, from Richmond in the north to Hayward in the south. In 1974, the cities of Fremont and Newark voted to join the AC District, but Union City, between Hayward and Fremont, chose not to join. The AC service area is therefore divided into two parts, the main area from Richmond to Hayward and the low-density suburban area of Fremont and Newark. Two AC routes run through Union City, connecting the two parts. In addition to local service throughout its East Bay service area, AC runs several routes across the San Francisco-Oakland Bay Bridge to the Transbay Terminal on the edge of downtown San Francisco. AC provides feeder service to all BART stations in its jurisdiction and local contract service in several outlying suburban areas. The District is governed by a board of seven elected directors, five of whom are elected by ward and two at large. The general manager directs a staff of 2,283 employees and a budget of \$83.8 million (Fiscal Year 1980-81). AC provides service to over 200,000 patrons* each weekday on its basic local and transbay routes.

Bay Area Rapid Transit District (BART)

BART, the first of the new regional rail transit systems to be built in the United States since the early part of the century, was first established by state law in 1957, following a two-year planning study. From 1957 to 1962

* Patronage is expressed throughout as one-way person-trips, or linked trips.

detailed engineering and financing plans were prepared, leading to the BART bond issue in November 1962. The passage of the bond issue allowed construction to begin in 1964. The first segment was opened for service in September 1972 and the last (the underwater Transbay Tube linking San Francisco and Oakland) in September 1974. The seventy-one mile, thirty-four station system is governed by nine directors elected by district. BART employs 2,029 people, with a Fiscal Year 1980-81 operating budget of \$105.5 million. Over 170,000 patrons are carried each weekday.

San Francisco Municipal Railway (Muni)

Muni, the oldest publicly owned transit system in the U.S., is governed by the San Francisco Public Utilities Commission (SFPUC), which also is responsible for the city-owned water and electric power agencies. The commissioners are appointed by the mayor. Under a recent reorganization by the general manager of the SFPUC, some functions formerly undertaken by Muni staff were shifted to new SFPUC staff, such as financial planning and marketing. The Muni general manager is responsible for day-to-day operations of the cable cars, streetcars (including new light-rail vehicles known as Muni Metro), diesel and electric trolley buses. Due in part to heavy use of passes, no firm patronage figures are available, but Muni staff have estimated anywhere from 500,000 to 700,000 patrons per weekday in recent years. Muni staff (not counting related SFPUC functions) now numbers 3,694, and the Fiscal Year 1980-81 operating budget was \$127.6 million.

Under a recent change adopted in the city's charter, the Board of Supervisors (the city council) may now amend Muni fare revisions recommended by the SFPUC, where previously the Board could only comment and return proposals to the Commission for reconsideration.

Golden Gate Transit

Golden Gate Transit, operated by the Golden Gate Bridge, Highway and Transportation District (GGBHTD), runs local bus service within Marin and Sonoma Counties, north of San Francisco, and across the Golden Gate Bridge, which it operates, to downtown San Francisco. Limited ferry service is run between two terminals in Marin County and the Ferry Building at the foot of Market Street in downtown San Francisco. The Bridge Board is composed of nineteen directors, who are appointed by the county boards of six counties from San Francisco to the Oregon border, plus one appointed by the mayor of San Francisco. In addition, Golden Gate operates local service by contract within Marin County for that county's non-operating transit district. Many Golden Gate routes are similar to those taken over from previous Greyhound Bus Line operations in the area. The district began transit operations in 1972, and now has 750 employees and a 1980-81 operating budget of \$30.4 million. Approximately 40,000 patrons are carried on a typical weekday.

San Mateo County Transit District (SamTrans)

SamTrans was established in 1974 to take over and expand existing local and commute services that had been operated by Greyhound Bus Lines and several cities in the County. SamTrans is governed by an appointed board, including 2 county supervisors, 3 city councilmen and 4 citizens. SamTrans buses service downtown San Francisco, the Daly City BART Station (western terminus of the BART system), San Francisco International Airport and all the Southern Pacific Railway commuter stations in the county. SamTrans staff numbers 389, with a 1980-81 fiscal year operating budget of \$23.1 million. Approximately 70,000 patrons are carried each weekday.

Santa Clara County Transit District (SCCTD)

SCCTD was formed in 1972 to take over and expand existing services in the county. The county board of supervisors governs the district. Bus service is rapidly expanding, serving not only the county, but also connecting with the BART Fremont station (southern terminus of the BART system), Southern Pacific Railway commuter stations in the county and several SamTrans routes near the county boundary. With a staff of 1,722 and a 1980-81 operating budget of \$84.3 million, SCCTD provides daily service to 85,000 patrons.

TRANSIT FARES AND PASSES

Each of the major operators provides at least one form of transit fare prepayment, principally monthly passes or books of tickets. (Table 2-3) The arrangements of most importance to this project were those concerning AC Transit, BART and Muni.

BART's Automatic Fare Collection (AFC) system is based on a magnetically encoded, stored-value ticket, which the user may purchase from vending machines in each BART station in any value up to \$20.00 (in nickel increments). The ticket is then used until its dollar value has been reduced below that needed to pay for a trip. Then the remaining value may be transferred onto a new ticket. These operations of keeping track of value used and issuance of new tickets are handled by AFC equipment in the stations. While the BART ticket is not a pass in the usual sense, it offers the rider the opportunity to choose his/her preferred amount of prepayment. The unique features of BART's AFC system are discussed in greater detail in Chapter 4.

AC Transit has a flat fare for bus service within its East Bay service area for all local routes. Express routes to downtown Oakland and transbay routes to San Francisco are zoned. In November 1979, AC introduced its first

Table 2-3
SUMMARY OF TICKET SALES PRACTICES

TYPE OF TICKET?	AC	BARTD	GGBHTD	SF Muni	SamTrans	SCCTA
Pass	Yes			Yes		Yes
Ticket Book	Yes		Yes		Yes	
Multiride ticket		Yes				Yes
<u>PRICE?</u>						
Basis						
-ticket	20 ride	fixed value	20 ride	--	20 ride	22-40 ride
-pass	36 ride	--	--	32 ride	--	34 ride
Price						
-ticket	\$9.50-19 local \$19-28.50 transbay	\$10 or \$20	\$26.10-\$54 (transbay only)		\$8-\$29	\$10-\$36
-pass	\$18 local \$36-54 transbay	--	--	\$16	--	\$17-\$34
<u>OUTLETS?</u>						
Type of outlets	universities; groceries; terminals; credit card through ticket agency	Banks, employers stations	Banks	Wide variety of outlets; employers	Employers stores, and city halls	Employers savings and loans; colleges
By Mail	Yes	No	Yes	No	Yes	Yes

local monthly pass, good for unlimited rides on routes within the East Bay. In March 1980, AC introduced its zoned Transbay monthly passes, good both for unlimited Transbay trips for the designated zones and for trips on all East Bay routes.

Muni has a flat fare for all of its services. It introduced its monthly pass (called the "Fast Pass") in 1974.

The current fare structures of these three systems are summarized in the following table, along with the previous fares. (Table 2-4) All three systems raised fares in 1980 and are expected to do so again in 1982.

Pass sales by AC and Muni have grown over time, with the volume affected by fare changes which changed the relative cost per trip for users. Historical data are shown in the following chart. The most recent available figures indicate approximately 100,000 Muni Fast Passes are sold each month, while AC sells about 7,000 local passes and 5,000 transbay passes.

While there are discounted transfers available for bus trips connecting to BART stations for both AC and Muni, there was no joint fare or single ticket among the three systems until the first joint pass was introduced for AC and Muni in September 1981.

ORGANIZATIONAL SETTING

One of the major motivations for undertaking this demonstration design was the institutional complexity. The transit agencies described in the previous section operate in a complicated organizational environment. Aside from individual dealings with various agencies at the state and federal levels (primarily Caltrans and the U.S. Urban Mass Transportation Administration), each operator must deal regularly with the Metropolitan Transportation Commission (MTC), the regional transportation planning agency for the nine-county Bay Area. MTC was formed by state legislation in 1970 to oversee the development

Table 2-4
FARE STRUCTURE COMPARISONS

	AC Transit 1)		BART 2)		S.F. Muni 3)	
	Old ('78)	New 6/29/80	Old ('75)	New 7/1/80	Old ('70)	New 4/1/80
<u>Adult (18-64)</u>						
Base	\$.35	\$.50	\$.30	\$.50	\$.25	\$.50
Express	\$.35	\$.50	-	-	\$.30	-
Multi-Zone & Transbay	(MZ) \$.35- .60 (TB) \$.75-1.25	\$.50-1.00 \$1.00-1.50	\$.35-1.30 \$.70-1.45	\$.55-1.60 \$.90-1.75	- -	- -
Local Pass	\$15 ('79)	\$18	-	-	\$11 ('74)	\$16
Transbay Pass (zoned)	\$30-50 ('80)	\$36-54	-	-	-	-
20 Local Tickets	\$7.00	\$9.50	-	-	-	-
20 Express Tickets		\$9.50-\$19.00	-	-	-	-
20 Transbay Tickets	\$15-25	\$19-28.50	-	-	-	-
<u>Youth</u>	(% discount)					
5 and under						
Local	Free	Free	Free	Free	Free	Free
Transbay	Free	Free	Free	Free	Free	Free
6 - 12 years						
Local	\$.25	\$.25	75%	90%	\$.05	\$.05
Transbay	\$.30-.40	\$.40-.60	"	"	-	-
13-17						
Local	\$.25	\$.25	no discount		\$.05	\$.05
Transbay	\$.30-.40	\$.40-.60	-		-	-
<u>Elderly and Handicapped</u>						
Certified handicapped						
Local	\$.10 ⁴)	\$.10 ⁵)	75%	90%	\$.05	\$.05
Transbay	\$.30-.40	\$.40-.60	"	" -	-	-
65+ years						
Local	\$.10 ⁴)	\$.10 ⁵)	90%	90%	\$.05	\$.05
Transbay	\$.30-.40	\$.40-.60	"	" -	-	-

- 1) Zoned fare structure for inter-city express and transbay service.
2) Graduated fare structure by station-to-station distance.
3) Flat fare structure.
4) Non-peak travel.
5) No restrictions.

MONTHLY PASS SALES

(THOUSANDS)

100
90
80
70
60
50
40
30
20
10
2

Muni Fare increase

AC Fare increase

Muni Fast Pass

AC Transbay Pass

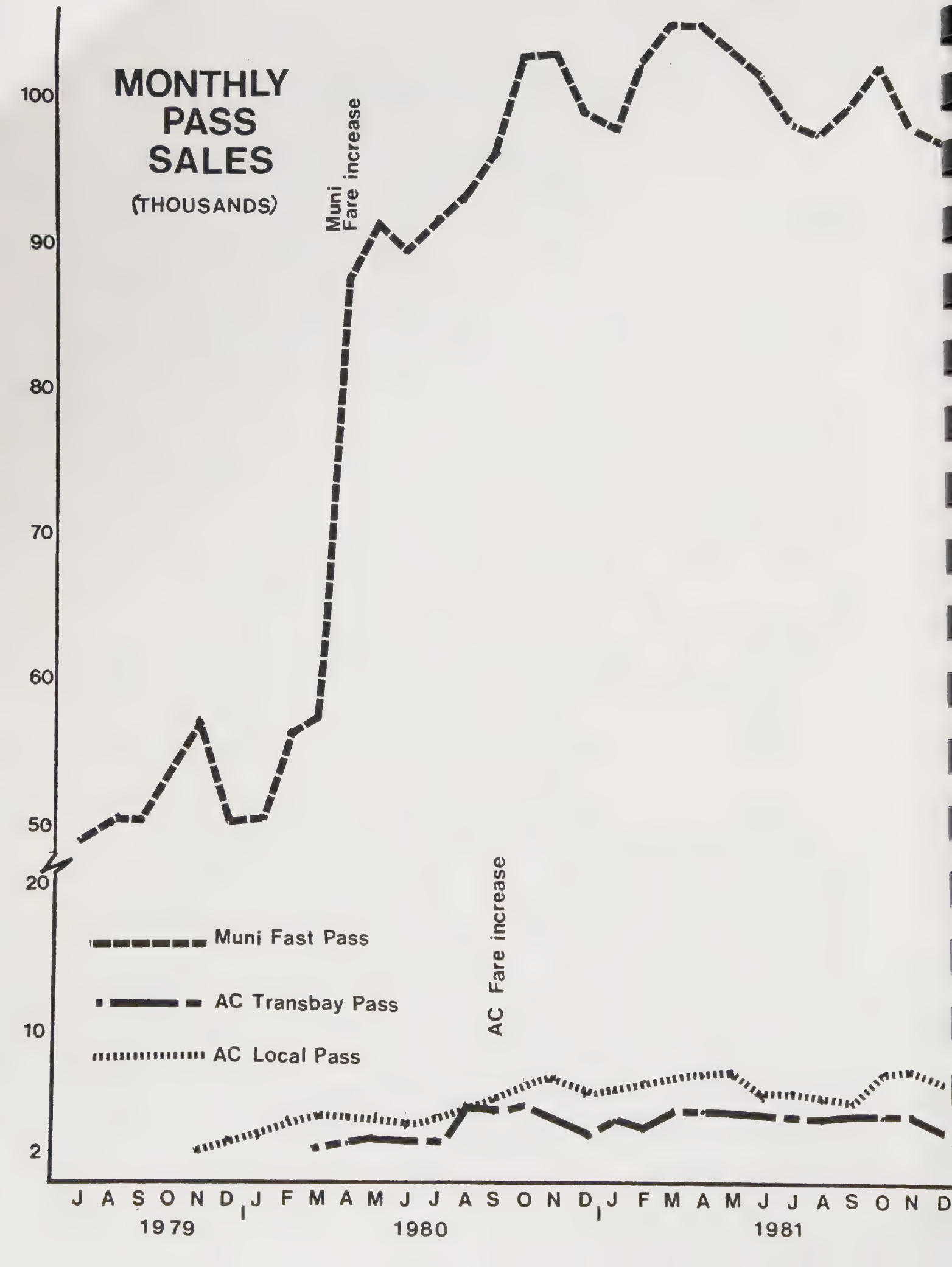
AC Local Pass

J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D

1979

1980

1981



of the regional transportation system, including both transit and highways, with broad review powers over applications for state and federal funding. Among its many other functions, MTC has tried to promote coordination among the transit operators through its fund allocations.

Active interest in transit coordination has grown over the past several years with the concerns over performance measurement, productivity improvements and increasing public subsidies for operations. In the Bay Area, this interest was expressed in the formation of the Regional Transit Association (RTA) in 1977. Soon after the formation of the RTA came the establishment of the Transit Operator Coordinating Council (TOCC). Both RTA and TOCC are discussed in detail in Chapter 3.

There also exists a separate body to coordinate the improvement and provision of Southern Pacific rail service in the San Jose-San Francisco corridor. This Project Management Committee (PMC) is composed of the general managers of SCCTD, SamTrans and Muni and representatives of Caltrans. The PMC, like the RTA Board, is assisted by several staff committees. While most of the work of the PMC concerns service planning and financial matters, it also has identified fare structure coordination as a future priority.

The project was directed by an MTC project manager, who was assisted by the RTA Coordinator (a specially funded position at MTC). The Services and Tariffs Committee (S&T) of the RTA, composed primarily of transit planners, served as the project steering committee. A project consultant (the University of California, Institute for Transportation Studies) was retained to undertake the initial research.

INFORMATION SOURCES

The project depended on a wide variety of primary and secondary sources. Existing surveys of transit patrons were examined for their relevance to the

project and computer tape files of the most useful surveys were obtained. A related UMTA-sponsored project in the area (the Regional Integrated Public Information and Transit Support Program, otherwise known as the RTA Marketing Project) incorporated interoperator transfer issues in its surveys at the behest of this project. Transit agency operational data were acquired on patronage and transfers, but little was available of direct use.

The project consultant augmented these sources with a brief postcard survey at interoperator transfer points where no other information was available. The consultant also collected extensive interview data from staff and managers at all levels of MTC and the transit operators to ascertain personal and institutional attitudes toward the coordination project.

The most elaborate data collection element of the project were the surveys of AC, Muni, and joint pass users which were designed and conducted by MTC staff. The surveys are described in detail in Volume II of this report.

CHAPTER 3

BACKGROUND FOR THE PROJECT

DECISION-MAKING ENVIRONMENT

The major organizations bearing on this project were briefly mentioned in the preceding chapter. In this section, we will look at some of them in more detail. This somewhat lengthy diversion from the specifics of joint transit fare prepayment is necessary so that the workings of the project can be understood. From the outset, this project was more one of demonstrating the possibilities and limits of institutional coordination than one of technical development, as will soon become evident.

MTC

The Metropolitan Transportation Commission (MTC) was formed by state statute in late 1970, following the regional transportation planning work undertaken in 1963-9 by the Bay Area Transportation Study Commission (BATSC). MTC's early staffing and organization were oriented to producing the first annual Regional Transportation Plan by 1973, as required by law, and to continuing the technical studies of the type undertaken by BATSC. Once adopted, the plan was the basis for review and approval of all local agency requests for state or federal funding. While the BATSC effort was typical of many metropolitan comprehensive land use-transportation studies of that era, following the 1962 Highway Act, the approval power the Legislature gave MTC was unique. In 1972, MTC's functions were greatly expanded by the passage of the state Transportation Development Act (TDA). TDA extended the state sales tax to previously exempt gasoline and returned part of this new revenue to each county in proportion to actual tax generation. In metropolitan areas, the state designated regional transportation planning agencies (RTPA's) to

administer the funds and gave such agencies a percentage of the tax revenues for planning and administration. This was the first assured funding for MTC and established the financial foundation for pursuing a variety of activities.

Other on MTC functions can be traced directly to several federal and state mandates, discussed more fully later in this chapter. MTC had been designated the region's metropolitan planning organization (MPO), responsible for carrying out the Federal requirements for coordinated transportation planning of highway and transit programs.* Federal and state environmental laws and regulations, especially in the area of air quality, also carried certain regional planning requirements for MTC.

More recent mandates, particularly from the state, have dealt with public transit operations and finance, resulting both in a wider range of functions for MTC and a shift in the relationship and perception of MTC with respect to transit operating agencies. Most significant of these responsibilities was the state directive that MTC scrutinize transit agency budgets, performance, productivity, fare revenues and service coordination. While these responsibilities have now been institutionalized through committees and routines of reporting, there is still occasional debate on whether MTC has overstepped its authority and interfered in the internal affairs of the independent agencies.

The RTA

Shortly after the first MTC plan was adopted, the Commission directed all transit districts in the region to participate in a cooperative federation to develop "a comprehensive plan including equipment to provide for the implementation of uniform coordinated transfer procedures and related privileges and

* The Association of Bay Area Governments (ABAG) is the overall federal metropolitan clearinghouse agency for the region.

fares among all the transit district systems in the Bay Area region not later than July 1, 1974...."¹ Since there was no enforceable mandate to form such a federation, little action was taken. The individual transit agencies strongly objected to the concept of a federation, which implied surrendering some authority to a central body. The model the Commission had in mind was the widely praised Hamburg, West Germany, federation, which successfully integrated a variety of transit systems into a coordinated system of services and fares to solve regional transit financing problems.²

The idea of a formal coordinating organization languished for several years, although informal coordination continued on a regular basis. By some accounts, the six major transit agencies decided to take independent action to form a coordinating group in late 1976 to head off possible mandatory action from the Legislature. For whatever reason, these agencies did begin meeting informally in 1977 with four committees of staff members appointed from each agency: Management Information Systems (later changed to just Management Systems), Procurement, Public Information, and Services and Tariffs. In March 1977, the group added two more committees (Personnel, Training and Affirmative Action; and Maintenance), selected the name of Regional Transit Association and heard the Services & Tariffs Committee report recommending four major issues for attention:

(1) The study of transfers and interface between the systems involving coordination, scheduling, proper physical arrangements to enable transfers to be made easily and quickly, and the physical collection of fares, among other things; (2) The study of initiating new services and the financing of these services; (3) The analysis of fare policy; and (4) The evaluation of service standards which would involve, among other things, the study of the present overlap and duplication of service.³

The RTA began to define itself more formally later in 1977, with the adoption of bylaws and objectives. Its statement of purpose was to:

¹All references are listed at the end of this volume.

1. Provide an organizational structure for the discussion and resolution of matters of mutual concern among the major transit operators in the San Francisco Bay Area.

2. To undertake projects of mutual benefit to enhance transit service to all people of the San Francisco Bay Area and to effect economies whenever possible through joint activities of the member operators.⁴

In 1978, RTA moved to become a more formal, legally established organization. This was in large part due to the development of a proposal for a regional transit public information and marketing program. To undertake such a large-scale project, apply for grants, contract for services, and incur joint financial obligations, the RTA had to become a legal entity. Under California law, this can be accomplished relatively easily by a joint exercise of powers agreement, which simply allows governmental agencies to agree to do jointly what they are already empowered to do separately (California Government Code, Section 6500 et seq.). The agreement was finalized in late 1978 and signed January 16, 1979. Formal bylaws were adopted on May 15, 1979. While the agreement allows RTA broad powers, for example, to hire employees and acquire property, the only formal actions taken have been in connection with the federal and state grants for the public information project and related agreements with MTC.

The chairmanships of the RTA Board and its committees rotate alphabetically by agency name each January 1. While there is some evidence that committee activities are affected by the individual who is designated chairman, the annual changes in Board chairman have not resulted in major shifts in direction. Prior to August 1980, there were no individuals devoted full-time to RTA activities. The secretary to the RTA Board, who is responsible for arranging all board meetings; preparing meeting agendas, packets and mailings; preparing minutes; and maintaining all official records, is an MTC departmental secretary who has a variety of other functions.

One MTC planner (manager of this project) had previously been working approximately one-quarter time on coordinating RTA Board agendas and assisting certain RTA committees. In August 1980, MTC hired a transportation planner to serve as RTA Coordinator; taking over most of these responsibilities and providing administrative and technical support to the Board and all its committees. The coordinator (co-author of this report) is in regular contact with all RTA committees to help keep them on their work programs and advise them of board actions. He also participates directly in committee work to facilitate work planning, data gathering or connections among committees.

The TOCC

In late 1977, state legislation was signed making permanent the half-cent sales tax in the three BART counties (Alameda, Contra Costa and San Francisco) as the principal, assured source for funding BART operations. The law made a portion of these funds available for allocation by MTC among AC Transit, BART, or Muni, on the condition (among others) that each:

Is a participating member of a transit operator coordinating council which the commission shall establish to better coordinate routes, schedules, fares, and transfers among the San Francisco Bay Area transit operators and to explore potential advantages of joint ventures in areas such as marketing, maintenance, and purchasing. The commission shall be a member of the council.⁵

By agreement with all of the six systems, TOCC membership was extended to include the general managers of all six RTA member agencies. MTC has since expanded the TOCC further to include representatives of three medium-sized transit operators in outlying areas and of the California Department of Transportation, in its role as operator of the Southern Pacific Railway commute service between San Jose and San Francisco. MTC's resolution forming TOCC identifies only a few general functions:

Objectives

1. To assist the MTC in meeting State and Federal requirements.
2. To focus attention on transit coordination.
3. To encourage top management participation in MTC's deliberations.

Role

1. Advise the MTC relative to its exercise of responsibilities specified in State and Federal programs. The TOCC does not have policy or management responsibilities.

Agenda

1. To cover policy and coordination issues identified by MTC.
2. To include additional items agreed to by TOCC.
3. To consider whether items are best handled by TOCC or referred to RTA.⁶

In practice, TOCC and the RTA Board generally meet concurrently, one after the other, with occasional intentional overlap in agendas. The legislative description of TOCC functions is really more closely in line with RTA activities, while MTC makes use of TOCC more as a discussion forum on MTC policies and actions or legislative developments at the state or federal levels.

Staff support for TOCC is fully provided by MTC, with the RTA secretary also serving as TOCC secretary. The RTA Coordinator assists the TOCC liaison (manager of this project) in arranging agendas and preparing materials for review.

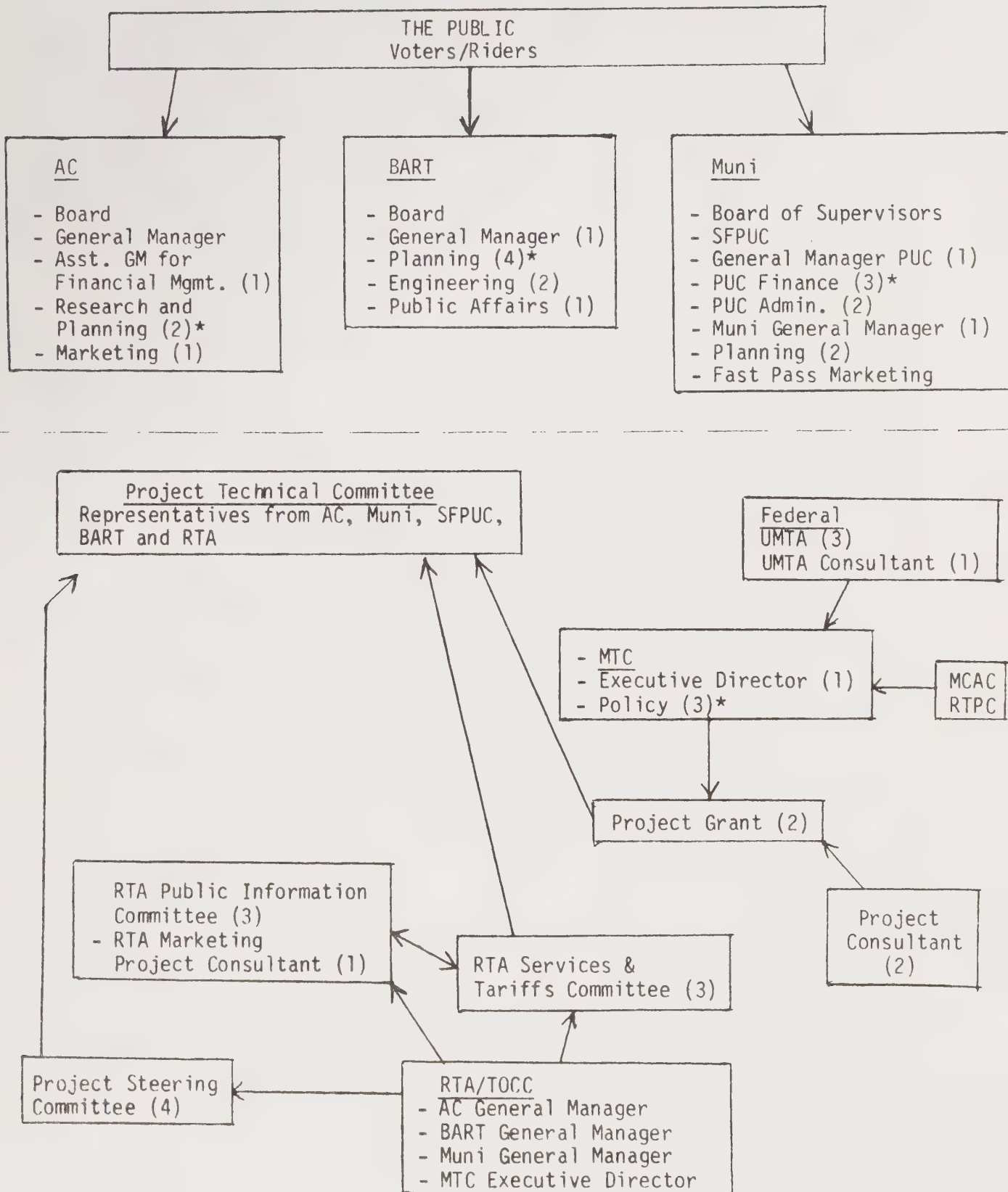
It has been MTC staff's practice to take important regional policy issues affecting transit to the TOCC for its information, discussion, input and, where possible, concurrence, before taking the issues on to formal discussion and action by MTC's committees. In some significant cases, such as in setting regional transit capital priorities for annual funding, the TOCC discussion serves to resolve conflicts and make trade-offs to reach an acceptable package before it is submitted by MTC staff for formal Commission action.

It should be noted that by no means is all interoperator or operator-MTC contact limited to RTA and TOCC activities. MTC staff deal regularly with operator staff on the development of planning and capital projects, and on their funding and conduct. Informal discussions among certain transit operator staff occur continually, especially where their service areas overlap or abut. Some interoperator coordination is formally undertaken outside of RTA. For example, a state-funded demonstration of joint transfers between Golden Gate ferries and Muni surface vehicles in San Francisco was an independent project.

In short, the decision-making environment of transit in the Bay Area is extremely diffuse and complex. The accompanying chart is a gross attempt to summarize all the organizational actors directly involved in the Joint Fare Prepayment Project. The numbers in parentheses indicate the number of individuals who have participated or who will be participating in the project at some level.

These organizational structures and histories provide the backdrop for the project, but they do not tell the whole story. Another set of constraints on the actors and the project comes from the variety of mandates on MTC and the operators, beyond those already mentioned, and from a long history of actions to encourage transit coordination.

FIGURE 3-1
IMPLEMENTATION ENVIRONMENT



Notes to Figure 3-1

1. Numbers in parentheses are the number of persons who have been or will be involved with the joint pass project, so far as can be determined at this time.
2. Voters and riders of the three systems overlap, although the boards and staff tend to consider "their" constituents to be independent.
3. In the upper chart, there is some overlap among the RTA/TOCC committees, the technical committee and the staff total.
4. Asterisk (*) indicates membership on the technical committee.

THE MANDATES TO COORDINATE TRANSIT

There is a long history of calls to coordinate regional transit. Many have been in plans and consultant reports; others have been in state legislation and MTC resolutions. The most continuous history involves coordination among AC Transit, BART and Muni, although the first such plan predates both AC's and BART's formation.

1956-1976 Studies

The 1956 report by the consultants to the Bay Area Rapid Transit Commission stressed the importance of supportive local bus service to the success of the proposed rail system; at this stage, BART was envisioned as a six county system looping the Bay:

We cannot overemphasize the importance of effective coordination and integration of the rapid transit system with the vast networks of existing surface transit lines.... The success of the rapid transit system in the Bay Area will depend on establishing desirable relationships between the surface and rapid transit lines.⁷

The nature of these "desirable relationships" is incorporated as a general assumption in the analysis:

Through effective cooperation or controls, all transit service in the Bay Area will be integrated with the rapid transit system. Such integration must include the elimination of competitive transit facilities, rerouting -- where feasible -- of existing interurban and local transit operations to act as feeders to the rapid transit system, and the encouragement of new tributary feeder services.⁸

The report also foresaw the possibility of joint rail-bus fares, but not immediately:

Because rapid transit revenues will be committed to the payment of rapid transit operating costs and debt service, the services provided by the feeders will involve collection of supplemental fares. In order to eliminate the cost involved in administering and collecting joint fares and paper transfers between the surface and rapid transit systems, it is proposed that generally the fare structures of each be kept separate. This does not

preclude the possibility of establishing joint fares and transfers between specific lines where such arrangements are found to be beneficial to both rider and operators after the rapid transit system has assumed a seasoned operational pattern.⁹

The 1962 consultant report that led up to the BART bond vote similarly emphasized the need for coordination of BART with surface transit by assuming that it would occur.¹⁰ The analysis, like its predecessor, treated feeder transit fares as a separate item to the traveler.¹¹

A short time after the bond vote, a detailed examination of coordination requirements was undertaken by AC, BART and Muni using federal funds and a consortium of consultants. The Northern California Transit Demonstration Project was completed in 1967. It concluded, not surprisingly, that coordination was needed:

To be successful, however, the attraction must provide more than a 70-mile-per-hour ride across San Francisco Bay; the seconds saved in line travel will be dissipated in minutes lost at stations, if the rapid transit service is not effectively coordinated with surface operations on both sides of the bay.¹²

The consultants investigated several alternatives for joint fares, settling on a 50% discount off the feeder fare for round-trip patrons.¹³ This approach was substantially adopted by Muni, although the full recommendations on coordinating services were never accepted by all parties.

From 1972 to 1974, separate studies of AC-BART and Muni-BART coordination were sponsored by MTC, again using federal funds to hire consultants to conduct the analyses. The Muni-BART consultant recommended a two-part transfer ticket, purchased in the BART stations, and a 50% discount:

It is recommended that the fare subsidy initially be shared on a fifty-fifty basis between BART and Muni. In the future, more sophisticated formulas could be developed to account for transfers among all the Bay Area transit operators.... Use of the BART stored-fare card in particular would offer a number of advantages.¹⁴

The AC-BART consultant found through a market survey that there was great interest in a single fare (i.e., where patrons pay only one fare for both BART and feeder service), but noted that, "The institutional implications and requirements of achieving a single-fare concept in the Bay Area go beyond the scope of this study."¹⁵ However, the consultant concluded with a recommendation for "Investigation of the market potential for monthly transit passes either for use only on AC buses or conceivable for combined AC/BART and regional use."¹⁶

With the actual schedule for opening BART overtaking the studies of how to accomplish coordination, "temporary" transfer arrangements were established. In the East Bay service area, transfer machines were placed in every BART station, near the exit gates. BART patrons can get a free transfer when leaving the station for an AC ride away from the station, but they must pay the full fare to the station. For a round-trip patron, this amounts to a 50% discount. However, it also allows abuse of two types. First, someone who gets a ride to the station and a free transfer away, ends up paying nothing to AC. Second, for some short trips in the central Oakland-Berkeley area, it is possible to take a BART trip in one direction, and take a free AC transfer when exiting for the return trip on any of the several AC local routes paralleling BART.

In San Francisco, the two-part ticket is purchased from special machines in the BART stations. One part is to be used for the trip away from the system, the other part is to be held for the return trip to the station. The two-part transfer is priced at one full Muni fare, and therefore represents a 50% discount for a round-trip, as with AC.

Both these "interim" arrangements are still in place. There have been no changes in the procedures since BART first began operations.

MTC Policies and Mandates

Calls for improved coordination of Bay Area transit services are legion; some have already been mentioned. Here we will describe those that have, presumably, some formal authority to effect changes.

The major document MTC must produce each year is the annual Regional Transportation Plan (RTP) update. All other related documents must reflect the goals, policies and financial assumptions of the RTP. Furthermore, to approve any claims for state or federal funds by local agencies in the region, MTC must first find the projects to be in conformance with the RTP. In its first document in 1973, MTC recommended that it sponsor:

...a cooperative federation of transit operators to propose, plan, keep the Commission advised and help implement certain programs of coordination in transit operations.¹⁷

Such programs were to include:

Coordination of fare structures, ticketing, transfers and fare collection procedures, including development of formulas for the disbursement of pooled fare revenue among operators.¹⁸

This reflected the formal RTP policy: "Eventual complete integration of schedules, services and fares among principal transit systems shall be fostered."¹⁹ As described earlier, the transit federation never panned out, as operators stiffly resisted the idea of ceding power to a central authority.

By 1980, the RTP policy had been revised to:

Coordination of schedules, services and fares among the principal transit systems shall be fostered, and operators are required to consider MTC principles when revising fares and services.²⁰

The principles referred to are those contained within a resolution MTC adopted in 1978. MTC staff had been working with the Services and Tariffs Committee of the RTA throughout 1978 on fare, transfer and service coordination guidelines. After extensive debate and haggling over wording, the RTA

Board accepted the report of its committee (though not considering it binding on any individual agency). MTC subsequently adopted the guidelines, substantially verbatim, as its statement of policy.* These principles include:

A uniform fare structure for the six major transit operators should be established throughout the region so that comparable fares are charged for comparable service.

...
To the extent practicable, fare payment should be required of users no more than once during a one-way trip.

...
Inter-operator transfers should not require additional payment by the rider. The fare for such connecting trips should be included in the overall point-to-point fare, regardless of the number of vehicles used.²¹

MTC's intention was to hold the operators responsible for implementing the guidelines and to explicitly consider:

...evidence of progress in implementing these principles and guidelines in future reviews of claims and applications for financial support of each of the six major transit operators and in five-year Transit Development Programs.²²

MTC incorporated these guidelines in two subsequent resolutions affecting transit fund allocations. The first, in late 1979, dealt with setting MTC's policy for allocating a new source of state transit funds.²³ Under the law, \$35 million over a three-year period would be available to the Bay Area to "enhance public transportation." The legislation left setting priorities to regional agencies, like MTC. Since this was the first fund source for transit that was not explicitly tied to county or other geographic boundaries or to particular types of expenditures, it represented a unique opportunity to pursue interoperator projects. However, debate over how MTC would exercise this unusual degree of discretion ranged over three months, with some operators on TOCC objecting strenuously that the funds should simply be passed

*See Appendix C.

through by formula to all transit agencies. MTC finally adopted a policy emphasizing improvements to regional transit connections, passenger security, handicapped accessibility, priority capital projects, and "to implement regional fare, transfer and service coordination guidelines."²⁴ The subsequent identification of eligible projects was equally controversial, and was not settled until February 1981, over one and one-half years after the initial legislation was passed.

The second, and even more controversial, application by MTC of its coordination guidelines was within the context of multi-year financial planning for AC Transit, BART and Muni. A series of Bay Area transit financing studies had been done in the mid-1970's, reflecting growing concerns over rapidly escalating operating costs and subsidy requirements.²⁵ As a result of the 1976-7 study, state legislation was passed in 1977, as described earlier, making the BART sales tax permanent. That gave BART a stable funding base, to bring it into a financial situation similar to AC's and Muni's, which counted on locally determined property taxes for the bulk of local subsidies. However, California's constitutional amendment (Proposition 13), passed in June 1978, severely limited all local governments' abilities to increase taxes.²⁶ This effectively reversed the financial position of BART relative to AC and Muni.

To partly rectify this, legislation was passed in 1979 to amend the BART sales tax law to remove certain restrictive language. In addition, the legislation required MTC to develop, in cooperation with the operators, a financial management plan "to continue the vital transit services of these transit operators." The plan was to include:

...criteria upon which revenues are to be allocated. These criteria shall include, but not be limited to, consideration of local tax contributions and fare levels, coordination of services, and other measures designed to encourage the provision of efficient and effective transit services.²⁷

To produce the financial plan, MTC formed a policy committee composed of its commissioners from the three BART counties and representatives of the three transit agency policy boards. MTC staff worked with the three operators to develop base financial planning figures and projections, and prepare recommendations to the policy committee.

Acting on the recommendation of the policy committee, MTC adopted an interim financial plan for the three operators in February 1980, urging each to raise fares sufficiently to cover the legislatively required 33% of operating costs, and moreover urging that these fare increases be accomplished in a coordinated manner, consistent with MTC's guidelines. A deadline was set for adoption of a coordinated structure at at June 16, 1980. Moreover, the MTC resolution said,

...should the three operators not develop and adopt a coordinated fare structure as provided for in the financial management by June 16, 1980, MTC will postulate a coordinated fare structure for the three operators for the purpose of allocating funds to the operators for the 1980-81 fiscal year.²⁸

This did not go over very well with the three operators. Each responded with its own resolution, expressing varying degrees of consternation at MTC's infringement on its fare-setting responsibilities. The reaction was also captured in several local newspaper headlines and editorials.²⁹

Nonetheless, Muni raised its fares in March 1980 and AC and BART followed in June, with each agency's base cash fare set at 50¢, the first time all three had ever been at the same base price. AC's cash zone fares for transbay trips were set equal to the BART fares for stations nearest the AC zone lines.

The MTC's advisory committees have also highlighted fare and transfer coordination as priorities. Under state legislation (described further below), MTC appointed a Regional Transit Productivity Committee (RTPC) to review and advise on matters relating to improving the efficiency and

effectiveness of Bay Area transit operations. The RTPC included regional fare and transfer coordination among the "special emphasis projects" highlighted for action by the transit agencies in fiscal year 1980-81: "The objective is to simplify fare payment and ticket handling both for operators and for patrons who must use more than one transit system to complete a trip."³⁰

MTC's Minority Citizens Advisory Committee (MCAC) has included in its work plan the monitoring of MTC policies and actions relating to fare coordination. Its principal concern has been that any proposed joint fare arrangements be examined for their equity implications for minority and low-income persons.

Other State Mandates

The Transportation Development Act (TDA), first adopted in 1971, provides funds for local public transportation through the state sales tax. MTC has authority to allocate these funds within each county in the Bay Area, but the law stipulates:

All operators shall be encouraged to establish maximum coordination of public transportation services, fares, transfer privileges, and all other related matters for the overall improvement of public transportation service to the general public requiring such services within the affected areas.³¹

The commission shall approve those claims which will not result in the undesirable duplication of public transportation services, and which will provide for a coordinated public transportation system in the region.³²

A 1979 addition to the Act included:

Where there are two or more operators within its area of jurisdiction, the transportation planning agency (MTC) ... shall adopt not later than July 1, 1980, rules and regulations to provide for transfers between the public transportation services of the operators so that such services will be coordinated.³³

Other sections added to TDA over the years have reinforced various coordinating and reporting requirements:

The State Controller ... shall design and adopt a uniform system of accounts and records, from which the operators shall prepare and submit annual reports of their operation to the transportation planning agencies having jurisdiction over them.³⁴

Each transportation planning agency shall annually identify, analyze, and recommend potential productivity improvements which could lower the operating costs of those operators who operate ... within the area under its jurisdiction....

A committee for the purpose of providing advice on productivity improvements shall be formed by the responsible entity.... Prior to determining the allocation to an operator for the next fiscal year, the responsible entity shall review and evaluate the efforts made by the operator to implement such recommended improvements.³⁵

The transportation planning agency shall designate entities other than itself ... to make a performance audit ... of each operator to whom it allocates funds.... A performance audit shall be submitted by July 1, 1980, and by July 1 triennially thereafter.... No operator shall be eligible to receive an allocation under this chapter for any fiscal year until the transmittal of reports of its performance audit to the entity which determines the allocation to the operator.³⁶

In 1980-81, MTC allocated over \$70 million in TDA funds to the six largest transit operators for their basic operating expenses. This accounted for from under 2% of BART's operating budget to over 55% of SamTrans'. The ability of MTC to attach conditions in approving claims for this major fund source is one of the principal methods it has to achieve its objectives.

The 1977 law making the BART sales tax permanent also amended MTC's basic enabling statute:

The commission shall develop regional transit service objectives, develop performance measures of efficiency and effectiveness, specify uniform data requirements to assess public transit service benefits and costs, and formulate procedures for establishing regional transportation priorities in the allocation of funds for transportation purposes.³⁷

The conclusion from all this is that, over the years, the increased state funding for transit has carried with it closer scrutiny of the operators. The state has accordingly increased MTC's oversight responsibilities for functions which used to be considered entirely internal transit agency affairs. This fact serves as a backdrop for the organizational relationships affecting this project.

PROJECT HISTORY

Some of the early history of transit coordination in the Bay Area, described in the preceding section, might be seen as precursors for this project. The direct impetus, however, was a letter to MTC from the Urban Mass Transportation Administration (UMTA) in May 1978. The letter solicited the region's interest in participating in a demonstration project on integrating transit fares in a metropolitan, multi-agency context:

The Urban Mass Transportation Administration is interested in promoting public transportation and is considering providing demonstration funds to test establishing a simplified joint fare structure in a region, or part of a region, where public transportation is provided by several operators or where more than one mode is used.... The fare integration project would produce a passenger fare structure with identical fares for broken or continuous journeys of the same length regardless of the mode, or combination of modes, used. Thus, passengers within the area covered would be able to change vehicles as required, with all fare barriers eliminated between the different operating agencies.... The proposed demonstration is designed to promote intermodal and interagency integration through a unified fare structure.³⁸

Naturally, this fit right into MTC's avowed interests. However, it took from May 1978 to July 1979 for MTC to develop and submit a demonstration grant application. Delay of this sort is a common problem in complex institutional environments. First, the RTA Services and Tariffs Committee was contacted to consider the UMTA solicitation. By the end of August 1978, a meeting had been arranged between UMTA representatives and members of the committee to discuss possibilities. It should be recalled that this was the same time that the

committee was working with MTC to get agreement on regional coordination guidelines, and also was coincident with the fiscal distress caused by Proposition 13's passage.

In the fall of 1978, MTC continued to push to gain the RTA's support for a demonstration. On the one hand, the operators were suspicious of the federal role and intentions. On the other hand, the grant would provide 100% outside money for a risky project.

By December 1978, MTC had adopted the regional coordination guidelines, including language supportive of prepayment. Following continuing discussion between MTC staff and the Services and Tariffs Committee, MTC finally brought a proposal to the TOCC in March 1979. The general managers requested more information and time to consult with their policy boards before agreeing to join in a demonstration grant. MTC formally requested each agency's support in a letter May 3, 1979. Meanwhile, MTC staff were preparing a detailed proposal and getting comments from Services and Tariffs Committee members.

At this stage, MTC had hoped RTA would take on the project, but it became clear that the general managers were too cautious to plunge ahead with what appeared to be a commitment to joint fares. Instead, MTC restructured the proposal so that it was a grant request from MTC for the design phase of a demonstration, rather than a complete package from design to implementation and evaluation. The general managers agreed with that approach, and also agreed with MTC's request to make the Services and Tariffs Committee the steering committee for the project. Since the proposal and eventual award were to MTC, however, the RTA committee served in an advisory, rather than steering, capacity.

After the July 1979 proposal submission, there was a hiatus of several months while UMTA reviewed the application and while MTC completed all follow-up clearances. MTC received approval to proceed in October 1979, but approval

of the proposed consultant contract was delayed until March 1980 by UMTA administrative questions. MTC had gone ahead and begun the subcontract with the consultant in January by agreement with UMTA. After final reviews of the consultant contract by legal staff of all affected agencies, the contract was finally executed in May 1980, nearly two years after the initial UMTA letter of solicitation.

The consultant continued work in the first half of 1980, under the general direction to investigate the feasibility of joint fares in the area, concentrating on the market for such joint fares and on the institutional considerations.

During this period, the consultant met regularly with MTC staff and the steering committee to discuss alternatives and narrow the focus of study. By late spring 1980, the steering committee was leaning toward a two-part project definition, one for AC/BART/Muni coordination, the other for the Southern Pacific rail corridor (SP/Muni/SamTrans/SCCTD). The committee agreed with the consultant that the most likely candidate market for joint fare prepayment was the regular commuter, who accounted for the most intersystem trips (see Volume II). Consequently, a monthly, unlimited-ride pass was considered the major option to pursue, although there was some interest in a multi-system weekend pass.

The direction of the project changed rapidly in June 1980, when the general managers of AC, BART and Muni wrote to MTC's executive director to defuse criticism that not enough effort was being made to achieve coordinated fares. Recall, MTC had set a deadline of June 16 for coordinated operator action before proceeding with its fund allocation decisions. The date of the letter from the general managers was June 16.

The letter suggested that the three agencies were willing to cooperate in developing multi-operator passes if MTC would reserve \$4 million in BART sales

tax funds (from the 1/2¢ sales tax in the three BART counties) for the project and make full allocation of all other available funds to the operators. MTC agreed with this approach, did not "postulate" any fares, and made its June 1980 allocations accordingly. In each of the three operator's allocation instructions were the words:

As an incentive for the development of a more coordinated fare structure \$1 million of the AC allocation (\$1 million of Muni's and \$2 million of BART's) is reserved to defray the costs of a three operator joint pass demonstration and follow-up. The MTC Executive Director is authorized to make actual disbursements of these funds at appropriate milestones in the demonstration.³⁹

Thus, a very large local fund reserve had been suddenly created to fund a full demonstration, certainly far more than could have been hoped for from UMTA in subsequent grants. Furthermore, there was an explicit expression by BART of its intentions to pursue modifications of its automatic faregates for the purpose of accepting passes. Previously, BART staff had been reluctant to commit to such a course of action.

Another event at this time narrowed the project. After lengthy negotiations, the contract had finally been executed between Caltrans and Southern Pacific on July 1, 1980. Since it would be months before the PMC committee structure would be addressing fares, it seemed prudent to delay any further work on joint rail-bus passes in that corridor until more basic service and funding questions were settled.

In July, after discussing the issue with the Services and Tariffs Committee, MTC presented the TOCC with a proposal to organize the now redefined multi-operator pass project, incorporating both the work that had been done to date, and the preliminary tasks and organization suggested in the June 16 letter from the three general managers. While some objected that MTC was trying to interfere in an operator initiative, it was finally agreed that a special technical committee would be formed comprising the Services and

Tariffs staff from AC, BART and Muni, plus an MTC representative to develop, implement and monitor the joint pass project. The three general managers plus MTC's executive director would be the steering committee. After a preliminary meeting in late July 1980, the technical committee began meeting regularly to develop its work plan. The work of the committee is detailed in the following chapter. A summary chronology of the project and related events is provided in Figure 3-1.

Figure 3-1
JOINT PASS PROJECT CHRONOLOGY

1977-78	Commencement of work by RTA Services & Tariffs (S&T) Committee to define inter-operator coordination projects; o identification of BART-Muni Fast Pass as a priority project o development of fare, transfer and service coordination guidelines, subsequently adopted as MTC policy (Resolution No. 620, Dec. 1978), including desirability of fare prepayment
May 1978	Letter from UMTA soliciting interest in joint fare pre-payment demonstration
July 1978	AC Fare Increase
August 1978	MTC report to RTA Board on UMTA letter, meeting with UMTA staff, meeting with S&T to consider project
Sep.-Dec. 1978	Development of project concept paper, discussions with UMTA; delay pending adoption of coordination guidelines
Jan.-Mar. 1979	Development of project description, application package by MTC with S&T advice
March 1979	Presentation to TOCC, agreement on scope (demonstration design only, MTC as grantee for convenience, further operator participation pending outcome of design study, S&T Committee as steering committee, actual demonstration to be by RTA)
Apr.-June 1979	Refinement of work scope with S&T, letters of support from six GM's, actions by MTC committees authorizing application
July 1979	Project application sent to UMTA
October 1979	Project grant approval received
November 1979	First AC local pass introduced
Nov.-Jan. 79-80	Contract development with project consultant (UC/ITS)
Jan.-Sep. 1980	UC Research
Feb. 1980	MTC Resolution No. 766 adopting AB 842 AC/BART/Muni transit finance plan recommendations, stressing coordinated fares, calling for multi-operator passes
March 1980	First AC Transit zoned transbay passes introduced
April 1980	Muni fare increase

Figure 3-1 - continued

- | | |
|----------------------|--|
| June 1980 | <ul style="list-style-type: none">o Letter to MTC from three GM's recommending joint project \$4 million for support of joint passesDiscussion with S&T of organization of project |
| July 1980 | <ul style="list-style-type: none">o First meeting of project committeeo Presentation to TOCC of S&T recommendation on organizationo BART fare increase. AC cash fare increase. |
| Aug. 1980 to present | <ul style="list-style-type: none">o Development of project work plano Policy direction from steering committeeo Identification of projectso BART technology development begun |
| Sept. 1980 | AC pass price increases |
| Oct. 1980 | Survey of AC and Muni pass buyers |
| Sept. 1981 | Introduction of joint AC-Muni pass |
| Oct. 1981 | Survey of joint pass buyers |

CHAPTER 4

DESIGN FOR THE JOINT AC-BART-MUNI PASSES

NARROWING THE FOCUS

MTC's original idea was to involve all of the major transit systems in the prepayment design project so that they would become actively involved in the eventual regional fare demonstration. As detailed in Chapter 3, a variety of events and decisions external to the project resulted in a much narrower focus: a system of joint monthly passes among AC Transit, BART and Muni. As Volumes II and II detail, this focus, while institutionally narrower, still represents the largest market for intersystem passes in the region.

The first AC/BART/Muni committee work program proposed several distinct passes: AC-Muni, BART-Muni (intra-San Francisco), AC-BART transbay, AC-BART East Bay, and a global 3-operator pass as the ultimate end. As the committee discussed these options, it soon became clear that the issues are essentially the same for all of the BART-bus combinations. Thus, as committee discussions evolved, the focus was turned more to the general questions of regional fare structure, within which any joint pass would have to be compatible.

ORGANIZING THE APPROACH

The committee is dealing with three distinct but interrelated types of issues: operational, financial, and technological. These follow the general outline identified in MTC's July 1980 outline (Figure 4-1).

Figure 4-1

JOINT PASS DESIGN ISSUES

I. Objectives

- A. Promote increased transit patronage
- B. Improve convenience of the transit system to all users
- C. Shift more patrons to pass use to improve operations, e.g., boarding
- D. Reduce cash-handling costs, improve cash flow
- E. Move toward regional coordination principles

II. Decision Options

- A. Type of pass: daily, weekly, bi-weekly, monthly
- B. Implementation time-frame: 6 months, 1 year, more than 1 year
- C. Level of Technological development:
 - 1. non-technological - manual/visual system
 - 2. intermediate technology - modifications to existing equipment
 - 3. new technology - new equipment; research and development required
- D. Pricing:
 - 1. based on existing passes and fares, without discount to users
 - 2. based on existing passes and fares, with discount to users
 - 3. based on new regional fare structure for multi-system trips
- E. Inclusiveness, restrictions:
 - 1. tailor to particular combinations of two or three operators
 - 2. incorporate flexibility to expand to other systems later
 - 3. do/don't restrict the use of the pass by time, type of trip, location, system or eligible user
- F. Cost-Revenue Sharing:
 - 1. direct reimbursements based on joint pass passengers carried
 - 2. formula reimbursements, not directly related to passengers carried
 - 3. no reimbursement
- G. Regional allocations to defray revenue losses (from discounts):
 - 1. specially earmarked regional funds
 - 2. normal fund allocations
- H. Marketing/Distribution System:
 - 1. uniform pass design and centralized marketing/distribution
 - 2. individual system design and decentralized marketing/distribution
- I. Accountability
 - 1. special accounting and surveys to auditable data
 - 2. periodic spot surveys
 - 3. no special efforts

Figure 4-1 (continued)

- J. Security: fraud (illegal use), abuse (i.e., loopholes and shortcuts)
 - 1. monitor technologically
 - 2. monitor by roving inspectors or police
 - 3. ignore, i.e., trade off losses from lower security level for costs of higher security

III. Evaluation Criteria

A. Technological feasibility

- 1. Is change necessary? If so, can change be accommodated in existing equipment?
- 2. If new equipment necessary, does required R&D already provide an answer? If not, can R&D be accomplished in-house.

B. Operational Feasibility

- 1. Is system more complex than present fares (for operating personnel?)
- 2. Is an added burden placed on operating personnel?
- 3. Does it improve or hinder operational efficiency?
- 4. How easy it is to abuse or defraud the system?
- 5. Do existing union work rules allow what the system requires?

C. Financial feasibility

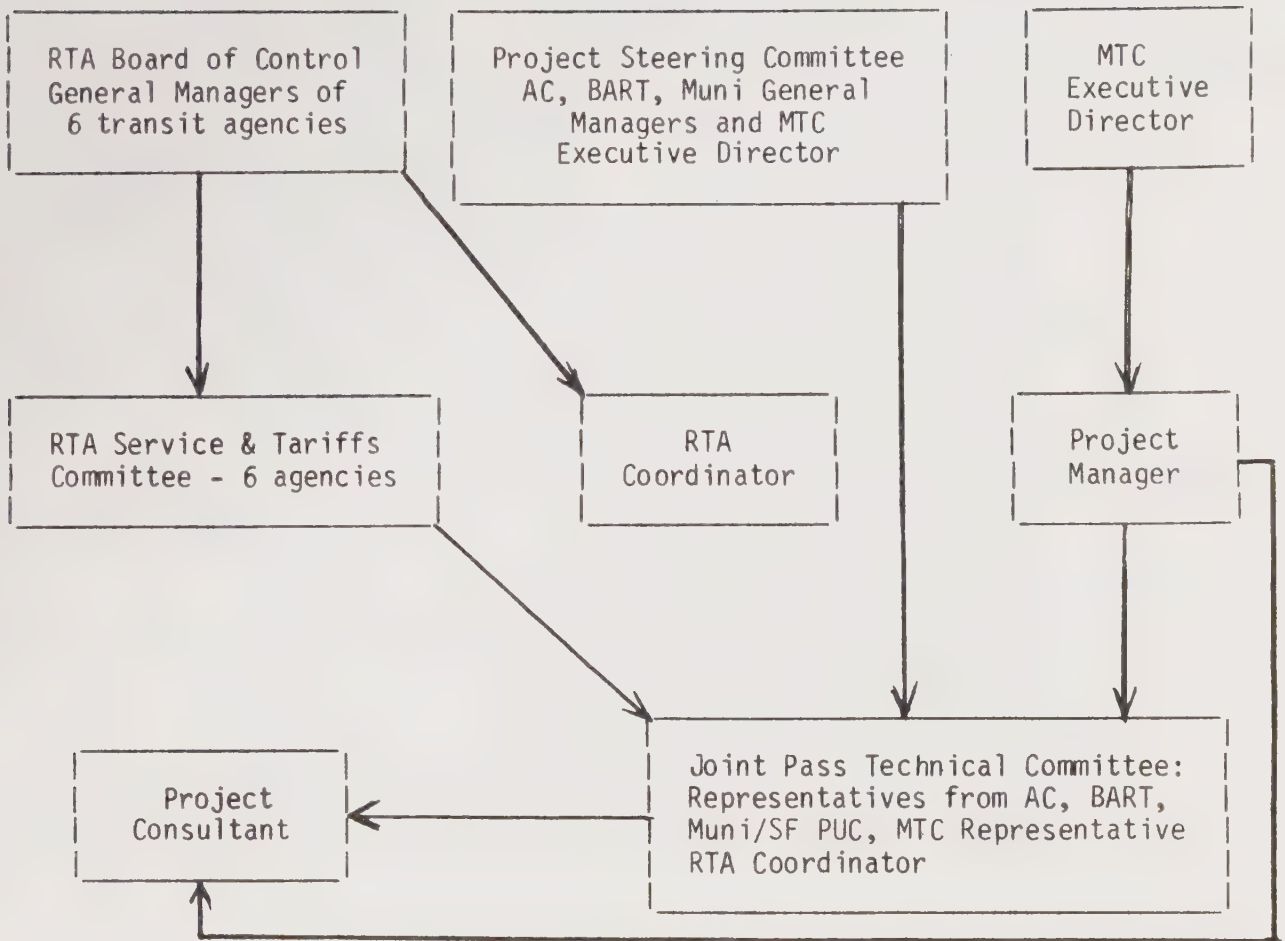
- 1. What are the administrative costs of the system?
- 2. What level of subsidy is required to off-set revenue losses from discounts or from fraud and abuse?
- 3. What capital costs are required?
- 4. What new personnel are required?
- 5. How does the system affect the operators' knowledge of ridership and revenue, compared to the current system?
- 6. Does the system allow clear accountability for costs and revenues?

D. Marketability

- 1. Is the system easy to explain, understand and use?
- 2. Does the system require special efforts to educate users?
- 3. Can the system be distributed through existing ticket outlets?
- 4. What payment methods are possible?
- 5. How many people will be attracted to the pass? How many will be new transit users?
- 6. Is the system equitable in its costs and benefits?

Figure 4-2

PROJECT ORGANIZATION



Operational issues include deciding which joint pass options to investigate, how to achieve a desired level of accountability in pass sales and use, how to distribute and sell the pass to potential users, and how to stage the project. The options identified, for example, include a series of two-way passes, like Muni-BART and AC-Muni, before moving toward a three-operator pass.

Financial issues focus on the revenue impact of joint fares. Of greatest importance to the operators and MTC is the need to maintain sufficient fare revenues. AC, BART, and Muni must obtain at least 33% of their total operating costs from fares in order to remain eligible for certain funds MTC allocates. There are fears that a joint pass would require some fare discount, thus resulting in an unnecessary revenue loss to some of the participating agencies. Discussion therefore revolves around determining the proper price for the joint passes and developing an equitable revenue distribution procedure. Since existing single-system passes are already discounted from the equivalent cash fare, there is an inclination to resist further discounts for joint passes. At the same time, some believe that people will not be willing to buy the joint passes if they are not discounted below the separate existing prices. The present thinking is to use discounts on joint passes only for short-term promotions of the new program, but not to build in a continuing revenue loss.

Technological issues are due to BART's automated fare collection (AFC) system and, to a lesser degree, to Muni's AFC system on its new light rail "Metro.". The early decision by BART to employ the AFC approach was not made with the bus systems in mind. The magnetically-encoded BART tickets cannot be read visually by bus operators, and bus system tickets and passes cannot be read magnetically by BART's AFC equipment. A joint pass involving BART and either bus system therefore requires a technological change. No magnetic card reading equipment is presently available for use on-board buses, although some is under development by at least one manufacturer. Such research and develop-

ment efforts are being monitored for their potential use in the project. Even if it were available, the on-board bus pass-reading system would only work if all 2000 AC and Muni vehicles were so equipped. Much less costly would be the modification of BART's AFC equipment to read a new type of bus-BART ticket. Two such alternatives were investigated.

The possibility of an entirely new kind of joint pass reader was rejected, since it would have to be installed throughout the BART system and could further complicate BART's equipment maintenance problems. Instead, the modification of existing AFC faregates to read a bus-BART pass was proposed as the first solution. This approach involves the reconciliation of differences in two types of BART faregates. Most gates in the BART system (approximately 90%) were manufactured by IBM, which, having found that product unprofitable, subsequently got out of the faregate business. Later gates were provided by Cubic Western Corp., which provided all the similar but refined equipment for the Washington, D.C., Metro system.

The dilemma is that the IBM and Cubic gates have complementary problems and benefits. The much older IBM equipment has generally been more mechanically reliable than the Cubic gates, but the IBM gates' 1960's technology does not allow easy manipulation of the electronic gate circuitry that determines the appropriate fare for each trip. The Cubic gates, while relatively less reliable mechanically (at least the second generation gates built for BART), have a more modern, built-in microprocessor which can be easily reprogrammed for a variety of fares, including, presumably, bus-BART joint fares.

The effort then focused on hiring outside computer/electronics experts to design a microprocessor that can be built into the IBM gates and still be compatible with the total AFC system.

The second approach was to find equipment which might be added onto existing BART faregates externally to handle joint bus-BART passes. Cubic had developed a piece of equipment that could be suitable for this purpose, called an edge reader, a slide reader, or a wipe reader, and BART acquired two prototypes for installation and testing. These are briefcase-size boxes which sit next to regular faregates. A suitably coded magnetic card is slid along a horizontal slot on top of the box by the traveler; the box reads the card and opens the BART gate if a correct code is present. Tests were needed to determine if the add-on equipment can be hooked into existing BART gates without presenting problems, if the Cubic reader can be adapted to read Muni's monthly pass (which has a magnetic stripe similar to BART's), and if the thin-paper BART and Muni tickets hold up in actual use. Most people now buy several BART tickets each month, and the tickets are inserted into the BART gates, which then read, process and return them to the traveler. The monthly joint pass would have to be used repeatedly and could be bent by the rider in pushing it through the Cubic reader. These factors were evaluated. (See the later section in this chapter on technology.)

To give some structure to the investigation of these issues, the accompanying chart (Figure 4-3) was developed, both to lay out work tasks and to keep track of agreements and unsettled questions. The separation of three types of passes was a matter of scheduling and phasing, rather than a real difference in approach. The AC/Muni pass, under existing fare structures, could be fairly easily accommodated by incorporating a sticker, signifying acceptance on Muni, on the existing AC transbay pass. This non-technological option could be pursued quickly and with pricing based directly on the sum of the prices of the existing passes.

Figure 4-3: AGREEMENTS TO DATE - INTEROPERATOR PASSES

TASKS	AC/MUNI	MUNI/BART	AC/MUNI/BART
1. OBJECTIVES A. Market B. Type of Pass C. Restrictions 1. Where 2. On Use 3. Adult/Discount	1. A. Commuter B. Monthly Pass C. 1. None 2. None 3. No Youth, E&H Discounts	1. A. General B. Monthly Pass C. 1. Within S.F. 2. None 3. No Youth, E&H Discounts	1. A. Commuter B. Monthly Pass C. 1. None 2. None 3. No Youth, E&H Discounts
2. PRICING, DISCOUNTS OPTIONS: A. Regional Fare B. Existing Fare 1. Sum of Fares W/ or W/O Discount 2. Single Fare	2. SUM OF EXISTING FARE W/\$2 DISCOUNT \$50.00, \$59.00 & \$68.00	2. OPTIONS UNDER STUDY Single Fare to be determined.	2. Geographically based regional fare structure. Value-based fare option; most like existing AC + BART fares.
3. COST/REVENUE SHARING A. Total Cost Admin., Capital, Subsidy B. Reimbursement Method C. Use of Regional Funds (how to split pot?)	3. A. \$72,000 Not Including Printing, Admin. B. MTC to AC, AC to Muni (Subsidy) C. AB 1107 funds for start-up costs	3. A. \$445,000 for capital; other costs under study B. Under Study C. SB 620 for Capital	3. A. At least \$1.625 million B. Through existing joint financial planning C. AB 1107 funds and SB 620 capital funds
4. MARKETING/DISTRIBUTION A. Where Sold: Existing Outlets, Banks, BASS, etc. B. How Sold: Existing Methods, Machines, Credit Cards C. Marketing-Existing RTA Project Connection	4. A. Trans-Bay Terminal & Office, Mail B. By AC Through Existing Channels (Terminal) C. At Terminal; on AC Transbay buses	4. A. Existing outlets B. Probably Existing C. Under study	4. A. Centralized or decentralized sales B. Options under study C. Under study
5. ACCOUNTABILITY A. Misuse B. Counterfeiting C. Etc.	5. A. Pass design preserves current safeguards against misuse and counterfeiting	5. A. Need to restrict travel to intra-San Francisco; anti-passback feature incorporated	5. A. Concern over possible "Bayfair Shuffle" problem; looking into time code. B. Safeguard against counterfeiting
6. TECHNOLOGICAL DEVELOPMENT	6. No technological issues involved in introducing this pass. Monitor other projects developing bus pass reader.	6. A. BART Fare Gate Modification option continuing B. Edge Reader option not recommended C. Phase-in of gate mod. to allow Muni/BART pass introduction as interim step	6. A. Gate Modification option continuing B. Edge reader option not recommended C. Need for vending machines, verifiers, addfare machines as well
7. EVALUATION/MONITORING	7. A. Pass Usage B. Revenue Impact C. Security	7. A. Pass Usage B. Revenue Impact C. Security	7. A. Pass Usage B. Revenue Impact C. Security

The BART/Muni intra-San Francisco pass was to be an early effort, for these reasons: 1) it is limited to just eight BART stations; 2) BART and Muni had recently set identical fares in San Francisco; and 3) Muni's operational plans to realign its service in the corridor served by BART. However, the technological issues involved for modifying BART's faregates for a Muni-BART pass are little different from those facing the ultimate three-way pass. Therefore, it was agreed that once the overall technological solution was agreed upon, it would first be implemented in San Francisco, but that no special technological solution be designed solely for the BART/Muni pass.

A further scheduling issue relates to the previously mentioned regional fare coordination policy of MTC, as applied through the transit financial management planning effort. Within that work, it was agreed that all operators would probably have to contemplate a fare increase in 1982 to meet fiscal 1982-3 revenue targets. The agencies agreed that introduction of the BART/Muni intra-San Francisco pass should be coincident with the coordinated fare increases. The AC/Muni pass would also, presumably, be priced within that new, coordinated structure.

The three passes were investigated in parallel, with a similar set of leading questions explored for each: pricing, financial management, distribution, promotion, monitoring, and technology. Pricing questions have so far dominated committee activities.

Fare Structure and Pricing Strategies

The pricing strategy for the AC-Muni interim pass (the sum of existing pass prices, plus a minor discount) is an example of modal pricing, that is, prices based on the fares of different agencies. This is the approach the project consultant pursued in the early months of the project, when there seemed to be little expectation of moving toward a regional fare structure.

The more preferred price would be based on a regional fare structure, independent of which operating agencies were involved. This strategy became known as geographic pricing.

Since it was desired that the AC-Muni pass be implemented as quickly as possible, there was to be little tampering with the existing prices. AC's transbay passes were priced by zones, \$36, \$45 and \$54; Muni's pass was a flat \$16. The joint price was agreed to be the sum of the two pass prices, minus \$2 as a promotional incentive. Since the 1980 pass user survey (see Volume II) and sales data indicated that a market already existed for purchasing the passes separately, it was believed this minimum level of discount would test the idea that convenience alone was an incentive to purchase passes. With centralized distribution of transbay AC passes at the Transbay Terminal and at the AC office in Oakland, distribution of the joint pass was simplified. Since all transbay AC travelers pass through the Terminal, that also serves as an easy focus for promotional efforts, which will focus on car cards on AC buses and placards and posters at the terminal. This pass was introduced in September 1981 and is further described in Volume II.

The BART-Muni intra-San Francisco pass price is still to be determined. At first, Muni wanted its existing \$16 pass to simply be accepted in BART's fare gates for travel within the city. Muni's pass was already magnetically encoded for Muni's own automatic faregates, which are used only in downtown Muni Metro (light rail vehicle) stations. Unfortunately, the Muni pass coding was not fully compatible with BART, although Muni's faregate supplier had been committed to producing a completely compatible fare card. Full technical compatibility is expected to be achieved soon. Even if the Muni pass could be read now by BART's gates, the \$16 price would mean that present regular BART riders in San Francisco, who pay 50¢ per trip with no discount, would shift to the lower priced pass. The resulting annualized revenue loss to BART was

estimated to be \$2 million, although the increase in Muni pass sales was projected to result in a net loss of \$1 million. Muni proposed that this amount be spent from the \$4 million reserve.

An alternative of a two-level price structure was discussed, under which the BART-Muni pass would be priced somewhere between the \$16 level and the estimated regular commuting costs for BART-only riders. No conclusive analyses were made, however. As it became clear that the technological changes needed to allow the Muni pass to be read by BART equipment might take until at least early 1982 to achieve, the motivation for pursuing the \$16 joint pass price was made moot. Since there was already a policy commitment to seek a coordinated fare increase in mid-1982, there was little point in pushing to introduce a low-priced joint pass that would lose revenue and be superseded in only a few months.

BART's technological development consultant has estimated that all work needed to modify BART's fare gates for the Muni/BART pass can be completed by November 1982. Pricing is dependent on the outcome of Muni's impending fare increase, which may occur as early as April 1982. BART and Muni staff have been assigned to develop an appropriate revenue-sharing agreement coincident with the fare increase. There has not yet been an agreement on what changes BART or AC may make in their fares in response to Muni's increase to achieve the "coordinated fare increase" goals.

The fare structure for the eventual AC-BART-Muni pass continues to be the focus for committee discussion. The joint pass, which would be good for trips on any combination of the three systems, would be priced according to a geographically-based regional fare structure, with price varying directly with distance traveled.

The criteria for evaluating fare structure options were grouped into those that are more important to transit users or to transit systems:

a) Criteria from the user's viewpoint:

1. Ease of understanding and using the fare structure
2. Equitability of fare differentials for all travelers;
i.e., reasonable and logical fare differentials
3. Competitive in relation to other modes and to single-trip prices
4. Fairness in relation to services received.

b) Criteria from the system's viewpoint:

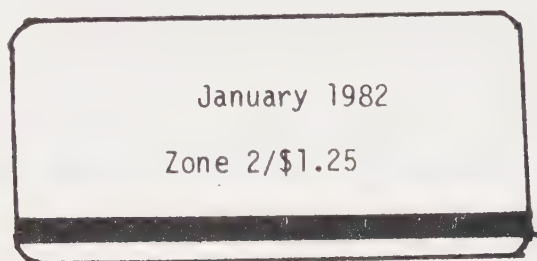
1. Technological - least need for new technological development
2. Operational - least administrative burden, ease of operator understanding, least fraud and abuse
3. Financial - people should pay for service received, revenues should be maintained, costs and revenues should be easily accountable, each system should recoup its fair share of revenues, total costs (start-up and continuing) of the pass program should be reasonable
4. Marketability - easily identifiable and significant market, distribution that makes passes easily available to intended markets.

Among many possible fare structure options (grid zones, concentric circles or segmented ring zones, hexagonal systems, etc.), the committee wanted to keep close to existing Bay Area structures, especially following criteria a.1. and b.2. above. This still left two distinct options: BART's graduated fare structure or AC's fixed zone system. Both options are based on distance; the only difference is in the coarseness of the gradations of fares with distance. At present, BART's mileage charge decreases with distance, and AC's charge per zone remains stable.

A general agreement was reached in December 1981 that the regional pass fare structure would blend the two approaches into what is now labeled the "value-based" option.

The principal difficulty with choosing either AC's fixed zone or BART's graduated fare options was that one or the other of AC's or BART's patrons and operating personnel would have to adjust to an entirely new system. This presented difficulties in both marketing and efficient operation. The recommended "value-based" option has the advantage of looking similar, or identical, to the current practices on each system, while allowing for full integration of fares.

The "value-based" option would result in a pass that looked something like this:



For BART riders, the pass would allow trips on BART of up to the trip dollar value shown. That value is also "translated" into an equivalent number of existing AC Transit zones. For example, a pass with a value shown of \$1.25 would allow any BART trip of value up to and including \$1.25, and also allow a) any Muni trip; b) any local AC East Bay trip; c) any express AC East Bay trip from Zones 1 or 2; and d) any AC Transbay trip from Zone 2, Zone 2-north or Zone 2-south. The pass would be read by a BART gate in the usual fashion, asking if the value on the ticket is sufficient to cover the station-to-station fare. The only major difference is that the gate will simply verify this value, rather than decrement the ticket value as at present. The pass will be easily recognized by an AC operator because of the use of the same identification of valid zones. Any joint pass would be honored for local AC and Muni trips, regardless of zone value.

There are presently 25 nickel increments in BART fares, from 50¢ to \$1.75. There could be an arbitrary number of joint pass increments, perhaps in 25¢ increments, to reduce the number of individual joint pass values that need to be produced and marketed.

The joint pass would be unrestricted, as has been previously discussed. It could be used for unlimited trips within the designated month for the allowable value trips. There would be no restriction on intermediate stops or transfers, and any of the three operators' services could be used, within the value limits.

The committee is now assigned to analyze the following questions in early 1982:

- 1) Should the multi-system passes replace or supplement existing separate system passes?
- 2) Should a constant "trip multiplier" (the number of monthly trips assumed in pricing the pass) be applied across all operators, or be modified to reflect some estimate of differential usage?
- 3) Should there be a stable distance charge?

The staff committee is working toward recommending answers to these questions and refining the value-based option on a schedule that fits the needs of the BART consultant's design phase.

Financial Management

Perhaps the most sensitive element of all, financial management has hardly been discussed so far by the committee. It will be most certainly determined by external events, mainly the availability of regional, state, and federal transit funding. The afore-mentioned joint AC/BART/Muni financial planning effort will provide the basic information and direction on which the joint pass committee will have to build.

Distribution and Promotion

The AC/Muni pass, as has been said, is being promoted at the Transbay Terminal and on advertisements aboard AC's transbay buses. While AC-Muni pass riders in this case must travel through the Terminal, and therefore are easily reached with centralized marketing, such is not the case with the BART/Muni and AC/BART/Muni pass. The results of the pass user surveys reported in Volume II indicate a desire for a variety of distribution methods.

This area of investigation is scheduled for committee attention in early 1982. Included in the analysis will be the use of existing pass outlets, mail and telephone ordering, and new vending equipment. AC Transit currently sells some passes through a company that provides a computerized ticket service for concerts, theaters and other major events. BART is continuing to investigate the installation of bank automatic teller machines which might also dispense transit passes and tickets.

Monitoring

With each pass introduced, sampling procedures will be used to survey new pass buyers, following up on the baseline data and AC-Muni pass survey described in Volume II. Sales and revenue data will also be collected to both evaluate the success of the programs and to provide supporting information for revenue distribution.

Technology

Quite apart from the issues described above, the technological question of whether and how to modify BART's faregates has consumed a great amount of attention in the project and will account for the largest portion of local resources used. While this is a unique issue with BART and the Bay Area, it may still be instructive to review how the complexity of a highly technological system can affect the progress toward fare integration.

BART pursued the technological options through an initial evaluation stage. The Cubic edge reader option and the faregate modification evaluations were completed in the spring of 1981.

Cubic Edge Reader

A feasibility test of the edge reader device was conducted at the Lake Merritt BART station from October to December 1980. Two prototype edge readers were installed at the station and approximately 200 BART employees were issued magnetically encoded passes and instructed in their use with the edge reader.

Of the 9,600 uses of the passes during the demonstration, the counters registered 3,200 unsuccessful attempts or approximately one-third of the attempted uses. The reasons for the high failure rate were determined by BART staff to be three-fold: incorrectly encoded tickets, tickets being demagnetized or scrambled, and finally, problems in the manual transport of the card through the device.

BART concluded, based on these results and on the results of a survey conducted among the employees who used the pass, that the existing Cubic edge reader model did not meet reliability requirements and was therefore unacceptable at the present time. This finding was corroborated by a similar test conducted in New York by the New York City Transit Authority.

BART Faregate Modification

BART retained a consultant to investigate the alternatives for both interim and long-term modifications of the BART faregate to accept monthly passes. The report of Phase I (evaluation and alternatives analysis) focused on IBM equipment and was completed in June 1981. The report concluded that the faregate modification was both feasible and relatively inexpensive and

that the best option was the replacement of all existing electronics with micro-processor based circuit boards. In addition, an interim solution of parallel processors was recommended to allow BART gates in San Francisco to accept passes at an earlier date than that for the entire system conversion. The project steering committee has approved this recommendation. The interim solution for San Francisco is expected by November 1982, while the total fare-gate modifications may take approximately two years.

Other Technological Issues

Yet to be identified are the capital costs associated with other possible pieces of hardware complementary to the BART faregates. Such items as ticket and pass printers, pass verifiers, pass vending equipment and add-fare equipment* will be necessary to implement the project. Inventories of available equipment and of the cost of developing or purchasing new equipment are important work tasks for the project Technical Committee in coming months.

* Add-fare machines are used to add value to a coded ticket.

CHAPTER 5

THE CASE FOR FARE COORDINATION

The goal of coordinating the fares among the transit operators has not been subjected to much debate. The degree of coordination and the schedule for achieving it have sparked lively disputes, but the basic premise seems universally accepted among the agencies. There appear to be three different reasons why fare coordination has maintained such popularity (in principle if not action).

Coordination as a Technical Objective

The most often cited reason for supporting fare coordination, particularly through the medium of a joint pass, is to improve efficiency in the broadest sense of the term. The principal arguments go as follows:

1. For present transit patrons who use more than one system, the necessity to pay separate fares imposes not just an inconvenience, but an unfair penalty. This burden does not register as a cost to any transit agency; it is, in effect, an external cost ("negative externality," in economic jargon) borne by riders. A joint pass would presumably redress this imbalance.
2. For travelers who are deterred from using transit because of the inconvenience of multiple fares, a joint pass would result in increased use of transit. This would be seen as increasing both the traveler's mobility and the productivity of the transit system.
3. If a high enough proportion of riders uses passes (including single-system passes), operating speeds may improve due to decreased transit vehicle boarding time, operating costs due to cash handling could be

reduced and cash flow for the transit agency could improve from collection of monthly pass revenues at the beginning of each month.

The underlying idea is that increased use of public transit should be fostered by removing barriers to easy use, especially when those barriers are simply institutional ones, like differing fare structures from overlapping, but independent, agencies.

Coordination as a Governmental Norm

The continuing litany on coordination laid out in MTC and state mandates in Chapter 2 is ample evidence that coordination may now be so much a part of the definition and expectation of "good government" that it may sometimes be pursued for its own sake. As Chapter 3 pointed out, the potential market for joint fares, while significant, is hardly a majority of transit users. In few cases cited above have the problems coordination is to solve or the results it is to achieve been explicitly identified. In most, it is simply assumed that multiple, independent agencies, being uncoordinated by definition, need to be brought together. Since this is so universally accepted, and motivates this project, we will not comment further on this assumption.

Coordination as a Political Objective

There are three possible political motivations for stressing coordination. The first is MTC's need to reinforce the idea of regionalism. While the many politically autonomous transit agencies can each claim a unique role in its own service area, many do overlap. And in the area of funding, all compete for the same types of federal and state aid. The more MTC can foster a "we're-all-in-it-together" attitude, the easier will be its job in achieving regional consensus on priorities for allocating funds. With inflation driving up costs and critical subsidy decisions being made outside the region, MTC

needs to keep the ideal of coordination before the operators at all times. Otherwise, divisiveness and competition could make each annual MTC allocation cycle a free-for-all.

Another political use of coordination is in the response by transit operators to MTC's mandate. In this project, the letter from the AC, BART and Muni general managers tried to defuse MTC's prior criticism:

Better coordination of transit fare structures is a worthy goal which can take place over time as the inter-dependencies between the operators become more evident. While MTC may be concerned that more progress has not been made, an opportunity does exist to put in place a process which should lead to greater coordination.⁴⁰

By recommending that a little over 1% of their combined operating budgets be set aside for a joint pass project, the operators hoped to show MTC that they acknowledged MTC's coordination goals and were willing to make a "reasonable" effort to comply.

The third political use of coordination was alluded to earlier, and that is the need for the region to make a good showing in its continuing competition with other regions in the state and other metropolitan areas in the country for available state and federal subsidies and in the lobbying for increases in the magnitude and flexibility of such funds.

For example, the transit agencies joined with MTC in sponsoring a forum in Washington, D.C., in March 1981 to let the area's Congressional delegation know the facts about transit in the region and its financial needs. In response to the current proposals in the Administration and Congress to drastically restructure the type and amount of federal aid to transit, MTC wants to keep a united regional front in approaching legislators, other metropolitan area organizations, and national lobbying groups.

In the competition for federal discretionary funds or lobbying for extensions or modifications of state subsidy programs, MTC believes that the

region's coordination efforts will demonstrate to the higher levels of government that the Bay Area is acting responsibly and deserves continued and increased support.

Other Views on Coordination

A new study represents one of the first attempts to cut at the root of the transit coordination efficiency assumptions. In examining AC-BART coordination, Landau, et al. concluded:

"... the policy ... should be to encourage each operator to do what it does best, to differentiate its product and its fare schedule, and to expand its patronage however it can ... it is likely that the quality of service each offers is enhanced by the competition for riders that maintain the lively rivalry between them."

If this dissenting view gains many followers in government, it would seriously challenge efforts like the joint pass project, which asserts that a coordinated fare structure is a good thing. In pursuing the fare prepayment project, MTC is adhering, as a matter of policy, to the dominant view on the value of coordination.

CHAPTER 6

IMPLEMENTATION ISSUES

The joint fare project is an excellent example of a very typical problem in multi-agency action. After months, even years, of debating the shape of the project, finally the pieces began to fall into place: a letter of agreement among the managers of the three systems was signed, the regional funding agency set aside substantial funds for the project, no outside (i.e., federal or state) agencies were involved directly to complicate matters, and a committee for coordinating inter-agency projects of this sort was already in existence and was assigned the task. With this general agreement on goals, ample resources and a very limited number of local agencies involved, one might have expected the project to progress rapidly. But such was not the case.

From the outset, participants were becoming impatient with delays and surprised by the continual emergency of unanticipated difficulties. In this chapter, we will look further into some of these predicaments and potential solutions for implementing the project.

How the Technical Committee Works

The dominant explicit view on coordination motivating the project is the first one described above in Chapter 5--technical efficiency. The first response was therefore to organize a technical committee to solve the problem of how to achieve a joint pass. The committee has been meeting regularly, often every other week, to discuss issues and exchange information, but progress has not always been steady or evident. In this section we will consider the internal and external agendas of the participants and the constraints on their actions. The authors, being both participants and

observers in this process, have tried to be candid and objective in this presentation, but a truly unbiased perspective is difficult to achieve.

One cannot talk only about abstract organizations and institutions when the work is really being done by individuals who bring to the task their unique talents and perspectives. The technical committee was not selected as a representative random sample of all people in the public transit industry, so any observations here obviously cannot be easily generalized. Nonetheless, it is important in undertaking inter-agency projects to recognize that factors like those discussed below may play an important role in determining the course of activities.

The membership on the committee is diverse. Some have been involved in their agencies in positions of responsibility for years. Others are new to both their agency and the joint pass questions. Each member's contribution to the committee appears to be a mixture of several factors.

Each member considers himself or herself a transit professional devoted to improving the service available to the public. The commitment to professional standards of conduct is common to all members. For example, the approach of work planning, the identification of goals and alternatives and the basing of objective recommendations on quantitative analyses are shared by all as the best way to rationally arrive at a solution.

At the same time, each member is aware that his/her particular assignment on the committee is to protect the interests of his/her agency. This surfaces in a variety of ways: restatements of goals and objectives, reinterpretations of policy directions, reminders of past discussions that were taken as agreements or commitments, requests for additional data to justify recommendations and suggestions to move in small stages so that the implications of recommendations for each agency might be fully explored.

Some members of the committee occasionally express an attitude common to many planning professional in governmental organizations: a feeling that technical efforts of the highest caliber will play only a secondary role, while the ultimate decision power rests with volatile political forces far beyond their control. While it is not a constant presence, this attitude can sometimes provoke a "why bother?" response when addressing politically sensitive issues.

In any group process, there can arise the suspicion that some members are not cooperating or have hidden agendas. The long history of conflict between BART and the two surface systems, for example, certainly plays a role, but perhaps more problematic is the suspicion between the three operators as a group and MTC. On the one hand, the operators would much prefer MTC not be less active participants. Fares have always been a very local matter within each transit agency. California's Proposition 13 in 1978 limited the ability of AC and Muni to raise tax revenues substantially, while BART is tied to its state-dependent sales tax. All three agencies require federal or state aid for operating expenses and capital improvements. Thus, setting fares becomes one of the last bastions of agency fiscal autonomy. This is one reason why there was such a great outcry in early 1980 when MTC took a stand on not only the need for fare increases, but on the level of the increases.

On the other side, MTC sometimes questions the operators' commitment to following through with coordination activities due to the checkered history of operator responses to various MTC policies. When public TOCC discussions between the leaders of MTC and the transit agencies have become particularly heated, this flavor has occasionally carried down to the staff committee.

Faced with these institutional differences, the committee must still find ways to achieve consensus decisions. When disagreement is technical, further data are marshalled or discussions held to reach a solution. When

disagreements are of a policy nature, the committee tries to frame the question for the steering committee comprising the agency managers. The first attempt to get clarification from the managers' committee, however, resulted in some further confusion for the committee as disagreements surfaced on what the managers had meant. The more recent meetings with the managers were more carefully structured with a follow-up memorandum documenting decisions and agreements, and appear to have resolved earlier uncertainties.

The result of these factors has pluses and minuses. On one side, one could say that the existence of competitive goals of the agencies keeps each committee member alert so that proposals are well thought out and analyses undertaken seriously and thoroughly. The negative side, however, is that it is not clear when a decision is really made. It seems that decisions are often preliminary, always revocable when any participant finds it necessary to reopen the question. This problem of contingent commitment will be discussed below.

Analyzing Implementation Problems

The solution to the problem of uncoordinated fares has generated its own problems. There have been delays both in putting all the pieces of the project together and in making decisions collectively, though the former appear to be the more vexing problems at present.

The study of how public programs are implemented is the province of political scientists and not within the professional expertise of the authors of this report. However, recent work in that field seems to shed some light on the nature of intergovernmental activities. The remainder of this chapter draws heavily on the limited literature of implementation analysis to provide a broad perspective for both describing what has occurred here and for proposing changes to better achieve the project's objectives. In borrowing from

this literature, the vocabulary of this branch of political science has been incorporated. Specialized terms are, therefore, defined as they are introduced.

One of the reasons for the relatively slow progress to date is the variety of goals held by each of the participants. MTC would like to see tangible progress made toward its long-standing coordination policies. In particular, as the region's transit legislative advocate, MTC would like to demonstrate to the Legislature that the major Bay Area operators have achieved some degree of fare coordination as a result of MTC's vigorous execution of the legislative mandate. MTC has less of a stake in exactly what kind of joint pass results, as long as the separate efforts of the agencies are coordinated in a set of consistent actions that do not adversely affect regional coordination and financial priorities.

Muni is concerned principally with developing a joint pass with BART for San Francisco residents. Muni has preferred as early as 1977 to have its monthly pass accepted by BART without additional fare payment. The Muni pass was intended to be compatible with BART gates, although the magnetic encoding, described earlier, is still somewhat different. Muni fears that the joint pass project may be diverted into pursuing the more complex three-operator pass, and thereby delay achieving what it sees as its more limited San Francisco-only priority. One reason for its concern is that certain route changes Muni wants to institute will require removing buses from the BART Mission Street corridor for use elsewhere in the city. To compensate patrons affected by such a change, Muni wants to simultaneously provide better feeder service to the BART stations in that corridor but does not want its patrons to pay a higher BART cash fare. Muni's impatience with the schedule for resolution of the technological issues had become a standard agenda item before

the most recent steering committee agreement to delay the BART/Muni pass until the 1982 fare changes.

AC prefers the simplest possible arrangement, with no additional fare discounts. AC is concerned that the system of joint passes will become too complex and too rigid, although it has not fully articulated those concerns. The major problem to come for both BART and AC is the reconciliation of their fares for East Bay and transbay service.

BART's concerns mirror its history of problems with technology. While it recognizes the need for its technology to be adapted for joint pass use, BART does not want to move quickly into a short-term solution that would have to be changed again later on. The perception is that BART and its patrons have suffered in the past from the quick-fix. Looking ahead to changes in equipment throughout its system, BART does not want to forge ahead with a special solution to accommodate Muni, for example, when it might have to dig into the equipment again for modifications to suit other passes. BART would prefer to work out all the technological problems at the outset, and at the same time take some steps to upgrade its faregates over the longer run. This can appear to be a more conservative and more time-consuming approach than Muni desired.

The clash of these different goals in the committee contributes to the delays in getting the project going and demonstrating progress. However, six factors appear to be important in explaining the implementation problems.

First is the variation of agency commitment to the project. While \$4 million is a substantial amount of money, no single operator can benefit greatly, and the funds are currently earmarked for the joint pass project alone. Since only a small part of each agency's budget is involved and only a fraction of all patrons are affected, the joint passes do not take on a very high priority for any of the operators. The only urgency is provided by

special pleadings to achieve separate goals, like Muni's desire to adjust local service or MTC's desire to see action on its policies.

A second factor is the relatively low staff commitment by each agency. No special staff have been hired for the joint pass work. Only in the case of BART had one person been assigned essentially full time to coordinate the engineering efforts related to faregate modification, and that commitment was only temporary. All other committee members have to fit joint pass work into already crowded schedules. Since many of these people are in key positions in their agencies where budgets, grant applications or plan preparation are under continuous deadline pressures, they must steal time from these assignments to work effectively on the committee. Naturally, the work of the committee moves erratically as the ability of individuals to contribute varies from week to week.

A third factor is the problem of decision-making due to contingent commitments. There is no structure within the committee, although BART has taken a lead in hosting meetings and preparing agendas and minutes. There is no chairman, and for the first six months, there was no official recorder or minutes. When alternates attend, decisions are delayed or discussion is diverted to bring them up to date. As a consequence, the nature of decisions made is best described as "contingent;" agreements are made depending on expectations about future decisions or results. The participants all reserve the right to change their minds if they judge conditions have changed. The typical consensus decision is, "I agree with X, for now." Little effort was devoted in the early stages to anticipating the key decisions or relating them so that they build on one another. It has, therefore, been difficult to know when a "Final" project choice has been made.

A fourth factor affecting implementation is the aforementioned combination of a history of organizational conflict, questions of the credibility and

intentions of participants and perceived threats to organizational autonomy. As has often been observed in organizational studies, organizational maintenance goals can override substantive goals. This can divert energies into defensive maneuvering which might otherwise go toward problem-solving.

A fifth factor is the great uncertainty in future transit financing. Each of the major subsidy sources is subject to annual revision by the state legislature or Congress. Further tax-cutting initiatives, like Proposition 9*, could have profound effect on available revenues, as could efforts to reclaim gasoline tax funds which had been diverted to transit in the past. Since there is a strong perception by the operators that a joint pass program could lose revenues, there is great hesitation in moving forward without firm MTC guarantees of revenue protection. The dilemma is that the uncertainties which give rise to the demand for guarantees also make such guarantees impossible.

A final factor contributing to delay is the underestimation of the difficulty of the project. It is simply more work than first thought. Little attention was paid at the outset to the detailed steps which have to be taken to arrive at a joint pass. For example, the technological issue requires at least the following steps:

1. Determine the type of joint pass to be investigated.
2. Determine the types of equipment needed to handle the pass.
3. Identify alternate ways of developing the equipment.
4. If new equipment must be built, has necessary research and development work been done?
5. If not, can it be done in-house? If not, who is qualified to do it?
6. If existing equipment can be used or modified, will changes adversely affect its routine performance?
7. Acquire and install test equipment.
8. Conduct and evaluate tests.
9. Select best performing equipment, or undertake additional tests.
10. Write detailed equipment specifications.
11. Select manufacturer and write contract.
12. Monitor production process for contract compliance.
13. Take delivery of new equipment, install and test.
14. Begin new service.

*? An unsuccessful proposal to cut California state income taxes in half.

Each of these steps might take weeks or months, but the committee did not develop such a detailed schedule. The continuing work of BART's technology development consultant should help fix that schedule. A similar list might be made for each critical stage: estimating consequences of different pricing strategies, developing revenue and cost-sharing methods, selecting ways to distribute the pass to the public and designing an effective marketing campaign.

Saltzman⁴² has examined barriers to interagency coordination arising between providers of special transportation services. Factors he identified seem to mirror some concerns expressed by the agencies involved in the multi-operator pass project. Four factors affecting the willingness to coordinate were highlighted in this model: cost, loss of control, time available to negotiate, and relevance to basic missions (or the question of priority). Each of these factors has emerged in the preceding discussion of implementation problems.

The fact that so many problems have surfaced so soon in this project may be a blessing; corrective actions might now be made to help keep this project near its intended course. This is the purpose of the following concluding sections.

Keeping the Project on Track

Beginning in January 1981, MTC staff involved in the project introduced some such corrective action. The committee generally agreed that there was a need to formalize the committee's work to some extent and to convert the committee meetings, previously consisting mainly of "progress reports," into working sessions on specific work tasks.

The RTA Coordinator volunteered to serve as committee recorder and secretary and provided minutes of each meeting which delineated agreements and work assignments. This task has subsequently been shared with BART staff. Updates were limited to one hour of the bi-weekly three-hour meeting, and the remaining two hours were to be devoted to consideration of assigned work tasks. These "shirt-sleeve" sessions were to be supported by discussion outlines which presented evaluation criteria and the relevant options and alternatives related to the work task.

This reorganization was an equivocal success. Committee discussions tended to become more focused with the introduction of specific work tasks. Agreements, while still somewhat tentative in nature, are now explicitly committed to paper. Finally, the increasing level of organization in the project has helped to move the project ahead.

The literature on implementation suggests two more strategies that may further help in carrying the joint pass project forward. Both come from concepts described by Eugene Bardach, a University of California, Berkeley, professor in the Graduate School of Public Policy (see References). He uses the analogy of assembling a machine to describe the process of implementing governmental programs. The focus is then on identifying and obtaining the right pieces and putting them together in the correct and most efficient way. The first strategy for improving implementation progress is, therefore, making sure that all participants in the project (in this case, agency managers and staff) have the same understanding of what Bardach called the "assembly process."

A second of Bardach's concepts is that there are predictable strategies that organizations tend to follow, given certain internal and external demands. He calls these "implementation games" and devoted most of a book to describing these patterns of organization behavior. The second strategy

implied by this is for the project participants to try to anticipate these games. The use of the term "game" may be an unfortunate choice by Bardach in that it may be taken out of context to imply frivolous or unimportant activity. This certainly was not his intent. Rather, he meant it simply as a general description of the nature of inter-organization relationships: competition, strategic moves and counter-moves, balancing of functions and powers, and so on. The whole purpose is to avoid win-lose games that divert project resources and compound conflicts.

Understanding the Assembly Process

Few project participants have tried to detail the necessary components of the project. The consequence is that certain components may be temporarily neglected or overlooked, only to reappear later as surprises. To reduce this element of unwelcome surprise, it may prove very useful to the participants to sketch out the major components and to identify which participants control them. Once identified, each major component can be broken down into its parts, asking at each stage of conceptual disassembly, "What will it take to make this part work? Who can provide? What will it take to make them want to provide it?"

The literature typically uses the term "actor" where we have been using "participant." Again, the term simply means some agency or person actively involved, not someone play-acting.

As an aid to this process, consider Figure 6-1. For each major component shown, an "X" indicates which actors significantly control the provision of that component to the project; "X" indicates the key actor whose participation is critical. Note that for most components there is no identifiable key actor. This means that provision of these components must be through bargaining among all actors. The implication in these cases is that delay must be expected

and schedules should be made realistically to allow adequate time to negotiate agreements.

Note also that in this scheme, the political support element is not presently defined as something that any of the main actors control. As the project becomes more definite in its scope and direction, the present participants should expect to hear more from all the political actors: the elected policy boards, the voters/taxpayers, the riders and the press. Since AC's and BART's boards are elected by district, we should expect that their final approval of the project will hinge on individual members' assessments of the benefits to their direct constituents.

The technical committee, therefore, must be mindful of who pays and who benefits under the particular type and price of pass chosen. For example, looking at the income distribution of AC and BART riders, there may be some fundamental equity considerations for the political boards just in deciding which groups of riders should benefit first. This point is illustrated in the following table.

Figure 6-1

MAJOR COMPONENTS IN THE PROGRAM ASSEMBLY PROCESS
AND THE ACTORS WHO CONTROL THEM

Components	ACTORS					
	AC	BART	Muni	RTA	MTC	UMTA
1. Agreement on type of pass	X	X	X		X	
2. Agreement on fare level	X	X	X		-	
3. Technology		<u>X</u>			-	-
4. Technical assistance					X	X
5. Money	-	-	-		<u>X</u>	
6. Financial impact	X	X	X		<u>X</u>	
7. Distribution/marketing	<u>X</u>	<u>X</u>	<u>X</u>	X		X
8. Joint revenue/cost sharing	X	X	X		-	
9. Political support	-	-	-	-	-	-

Key: X Actor must contribute this component

X Actor's contribution of this component is critical

- Actor not a significant contributor to this component

(blank) Component not relevant for this actor.

Table 6-1

Household Income Distribution of BART and AC Riders
(1978)*

<u>Income Range</u>	<u>AC East Bay</u>	<u>AC Transbay</u>	BART	BART
			<u>East Bay</u>	<u>Transbay</u>
Under \$7,000	45.1%	17.7%	18.6%	11.4%
\$7,000-14,999	29.6	36.7	29.5	27.3
\$15,000-24,000	15.7	24.2	28.5	29.3
\$25,000 and over	<u>9.6</u>	<u>21.3</u>	<u>23.4</u>	<u>32.1</u>
	100.0%	100.0%	100.0	100.0

* Tabulations by the authors from recent AC and BART surveys.

The transbay pass market under discussion appears to represent the more economically advantaged riders. Even though it can be argued that proper pricing will ensure that long and shortdistance travelers will be treated equitably, there may still be the appearance that this new product is being designed especially for one privileged group of travelers. If this kind of reaction is anticipated, the technical committee might do well to consider how the program might eventually be more broadly defined. For example, there could be a firm commitment to a further phase of the project to specifically address the travelers excluded in the first phase, or the first phase could be modified to include some consideration for lower income riders, e.g., a low-cost weekly pass or a low-income subsidy fare program.

Another political factor to consider is the transit riding public. While the transit clientele is largely unorganized, there are some small but vocal transit rider groups that may take an interest in the joint passes. One such group has already become interested, attending some of the transit operator meetings and describing the program in its newsletter. As this or other groups assume a voluntary monitoring role, there could be special demands made on the technical committee to respond. Likewise, only three local newspapers and one radio station have so far done stories on the project, implying possible future news media follow-ups which may require technical committee involvement.

The message in all this is that the technical committee must begin to acknowledge the gaps created by omitting the political support element from explicit consideration. As mentioned earlier, some committee members tend to consider politics beyond their influence, though they accept that they must respond to political forces. Instead, the committee might try to investigate ways of building political support for the project while it is still in its early stages. This could involve preliminary presentations to interested rider groups and press to explain the concepts and to gauge public reaction. This would be a major change from the technical staff's natural inclination to refrain from "going public" until all problems have been worked out. What is being suggested here is that one of the problems that needs to be added to the list and worked out is precisely how and when to go public.

Another political difficulty is that although there is a forum for involving policy board members, there is no forum for making binding, joint decisions among the three agency policy boards. Each proceeds in its own way in setting fares. Without a way to agree on joint fares, then, the burden is on the technical and steering committee members to begin to involve their policy boards in the project. This involvement, beginning with education on the

objectives and organization of the project, must proceed on parallel, but separate paths for each agency. The questions of how to bring each of the boards along in a timely manner, incorporate policy actors' input and resolve inter-agency political disputes have hardly been mentioned in the project. The commitment of the agencies' managers to a joint regional fare structure does not necessarily mean that they already have all the required votes on their boards. Making sure the votes are there when the time comes must be recognized as a critical task for the technical and steering committees.

In addition to expanding on the descriptions of the major program elements and how to obtain them, it will also be useful for the committee to keep in mind the various constraints on the assembly process. These, too, should be made explicit so that the committee's deliberations can take them into account. Among those identified so far are:

1. revenue recovery (farebox ratio) requirements
2. limits to available project resources
3. uncertainty in future project costs
4. financial interdependence of operators
5. conflicting priorities for staff attention

The idea of the assembly process is a useful one; keeping it before the project participants may help them to keep track of what they have accomplished and what yet remains to be done. The development of the work task chart (Figure 4-3, shown in Chapter 4) was only the first step in this direction.

Anticipating Implementation Games

It also might be healthy for the technical committee to discuss the types of implementation games that might endanger the project,* although this

*See reference 43 for a full discussion of such games.

strategy could backfire by further crystallizing conflicts. For example, the Territory game over conflicting jurisdictional claims could cause serious delays. No solution is readily apparent, but the committee must try to develop enough mutual trust so that no one feels his/her agency is under attack by the project. Barring unlikely legislative action, there is no easy solution for the Territory game. By concentrating on ways to assure an equitable distribution of project revenues and costs, the committee might begin to reduce the suspicion that the project means some agencies will win out of the expense of others losing ("zero-sum game").

Another likely game has already been mentioned as the problem of contingent commitment, or Tokenism⁴³. There have already been repeated public statements of support for the project, yet firm commitments have not been made. The hesitancy to participate unequivocally is due largely to the uncertain financial picture. A good strategy for heading off Tokenism before it can escalate might therefore be to concentrate on working out mutually acceptable financial analyses, assumptions and contingencies.

Other games mentioned by Bardach could play a minor role and should be mentioned:

Not Our Problem⁴⁴ -- AC and Muni must depend on BART to resolve the technological problems in faregates, but technology is a fickle servant. AC and Muni could use legitimate delays in resolving technological issues as an excuse to withdraw or at least to reconsider their participation.

Keeping the Peace⁴⁵ -- MTC is the most committed of the actors to getting a joint pass off the drawing board and into the world, but at the same time, MTC has limited power to force progress. If dissention among the three operators escalates, MTC might be tempted to agree to cutting the project back severely to a minimal program on which all could agree. The problem would be that the minimal program to keep the peace may be ineffectual.

Management⁴⁶ -- Alternately, MTC could force more cooperation (a non sequitur?) from the operators by playing its grant review role with a heavier hand. While this is feasible, it also would likely lead to charges that MTC was overreacting to a small failure and could gain sympathy from political actors for the view that operators should be allowed to work things out among themselves, free from MTC's interference.

Bardach describes the importance of trying to "fix" these games, that is, to make sure the games are played out so that implementation objectives are achieved. This is done by including in the project those individuals or coalitions with the incentive and resources to participate throughout the implementation process to achieve the desired outcomes.⁴⁷ BART, always concerned about getting its patrons to and from its stations, is the only one of the major transit agencies which might actively consider coordination with other systems as a part of its routine functions. It might therefore be expected to join with MTC on regional coordination issues from time to time, as it has done in the past. However, the major candidates for "fixer" on this project are MTC and interested transit rider organizations or reporters. MTC, as the regional agency, always must place at least a nominal priority on transit coordination projects like these. It is therefore the only organizational actor likely to sustain a resource commitment over time. Without sustaining the political support of particular political actors or outside groups, however, MTC may end up doing little but adopting resolutions that have limited effect.

Conclusions

One purpose of a case study like this is to determine if general issues and examples found in the literature can be confirmed in actual experience, thereby reinforcing or modifying the earlier work. We draw three useful conclusions from this analysis.

First, there is utility in subjecting a project to what Williams has called an implementation analysis.⁴⁸ By critically examining the environment and components of the joint pass project using the idea of the assembly process,⁴⁹ we have been able to interpretin some of the problems encountered so far and to sketch the framework for identifying gaps. Keeping a structured view of implementation before the participants may help create a self-correcting environment where all participants are encouraged learn from the inevitable mistakes of an innovative program.

Second, we have found the concept of implementation games to be a useful way of identifying and anticipating some problems, although the practical applications remain unclear.

Third, we have found, as did Pressman and Wildavsky, that just because everyone seems to agree on what to do, and money is provided, does not mean anything will get done:

Telling another person to coordinate, therefore, does not tell him what to do. He does not know whether to coerce or bargain, to exert power or secure consent.... Everyone wants coordination -- on his own terms.⁵⁰



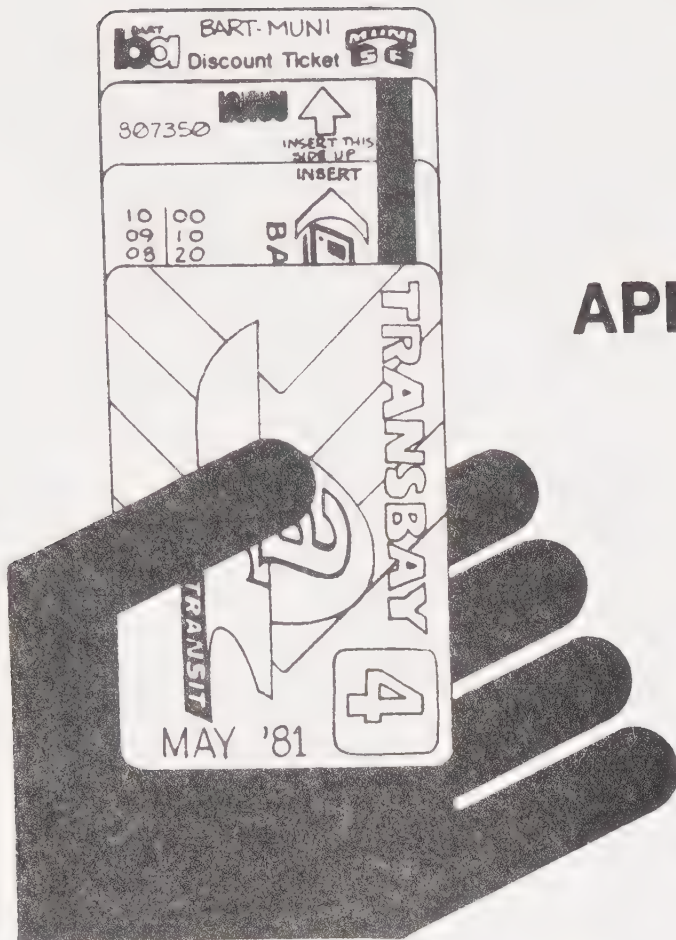
References

REFERENCES

1. Metropolitan Transportation Commission, Resolution No. 110, September 7, 1973.
2. See: Homburger, W.S. and Vuchic, V.R., "Federation of Transit Agencies as a Solution for Service Integration," Traffic Quarterly, July 1970.
3. Regional Transit Association, Minutes of meeting, March 16, 1977.
4. Regional Transit Association, adopted August 16, 1977.
5. California Public Utilities Code, Section 29142.4, added by Assembly Bill 1107, Chapter 1204, Statutes of 1977.
6. Metropolitan Transportation Commission, Resolution No. 504, February 22, 1978, revised May 27, 1981.
7. Parsons, Brinckerhoff, Hall and MacDonald, Regional Rapid Transit, a Report to the San Francisco Bay Area Rapid Transit Commission (New York, 1956), p. 77.
8. Ibid., p. 101.
9. Ibid., p. 77
10. Parsons, Brinckerhoff-Tudor-Bechtel, et. al., The Composite Report, Bay Area Rapid Transit (San Francisco, 1962), p. 33.
11. Ibid.
12. Simpson and Curtin, Coordinated Transit for the San Francisco Bay Area -- Now to 1975 (San Francisco, 1967), p. 1.
13. Ibid., p. 205
14. DeLeuw, Cather & Co., Final Draft Report, Muni-BART Coordination Plan (San Francisco, June 1974), p. 51.
15. Alan M. Voorhees & Associates, Inc., AC/BART Transit Service Coordination, Final Report (Berkeley, 1974), p. 74.
16. Ibid., p. 120.
17. Metropolitan Transportation Commission, Regional Transportation Plan, (Berkeley, 1973), p. 118.
18. Ibid., p. 119.
19. Ibid., p. 22.

20. Metropolitan Transportation Commission, Regional Transportation Plan for the San Francisco Bay Area (Berkeley, 1980), p. 6.
21. Metropolitan Transportation Commission, Resolution No. 620, December 20, 1978.
22. Ibid.
23. Senate Bill 620, Chapter 161, Statutes of 1979.
24. Metropolitan Transportation Commission, Resolution No. 751, December 19, 1979.
25. See: Bay Area Council, Financing Bay Area Transit (San Francisco, September 1975); California Legislative Analyst, Financing Public Transportation in the San Francisco Bay Area (Three County BART District), (Sacramento, November 1975); Metropolitan Transportation Commission, Revenue Sources for Transit Support (Berkeley, January 1976); Metropolitan Transportation Commission, San Francisco Bay Region Transit Financing Study (Berkeley, January 1977).
26. California Constitution, Article XIII B.
27. Assembly Bill 842, Chapter 264, Statutes of 1979.
28. Metropolitan Transportation Commission, Resolution No. 766, February 24, 1980.
29. See: San Francisco Examiner, "An Ultimatum on Transit Fares," February 24, 1980, p. 32; (Berkeley-Richmond) Independent and Gazette, "MTC Overstepped Its Authority," February 19, 1980, p. 13; AC Transit Transit Times, "MTC's Stand on Fares Draws Counter-Views," _____, 1980; (Berkeley-Richmond) Independent and Gazette, "BART Board Blast at MTC 'Monster'," February 29, 1980, p. 4; San Francisco Examiner, "Muni, MTC in Fare-Setting Showdown," February 28, 1980, p. 6.
30. Metropolitan Transportation Commission, 1980-81 Productivity Improvement Program (Berkeley, 1980), p. 12.
31. California Public Utilities Code, Section 99282.
32. California Public Utilities Code, Section 99302.
33. California Public Utilities Code, Section 99282.5, added by Assembly Bill 86, Chapter 1002, Statutes of 1979.
34. California Public Utilities Code, Section 99243.5, added by Assembly Bill 86, Chapter 1002, and Senate Bill 620, Chapter 161, Statutes of 1979.
35. California Public Utilities Code, Section 99244, added by Assembly Bill 86, Chapter 1002, Statutes of 1979.

36. California Public Utilities Code, Section 99246, added by Assembly Bill 86, Chapter 1002, and Senate Bill 620, Chapter 161, Statutes of 1979.
37. California Government Code, Section 66517.5, added by Assembly Bill 1107, Chapter 1204, Statutes of 1977.
38. Letter from Ronald J. Fisher, Director, UMTA Office of Service and Methods Demonstration, to Lawrence Dahms, Executive Director, Metropolitan Transportation Commission, May 12, 1978.
39. Metropolitan Transportation Commission, Resolution Nos. 870, 871, and 872, June 25, 1980.
40. Letter from Richard Sklar, General Manager, SFPUC, Robert Nisbet, General Manager, AC Transit, Keith Bernard, General Manager, BART, to Lawrence Dahms, Executive Director, Metropolitan Transportation Commission, June 16, 1980.
41. Martin Landau, et al., Redundancy in Public Transit, Vol. I: On the Idea of an Integrated Transit System (Berkeley: Institute for Urban and Regional Development, August 1980), pp. xii-xvi.
42. Arthur Saltzman, Coordination of Transportation by Human Service Agencies: An Interorganizational Perspective (University of California, Irvine, 1980), Ch. 3.
43. Eugene Bardach, The Implementation Game (Cambridge, Mass.: The MIT Press, 1979), pp. 98-108.
44. Ibid., pp. 159-163.
45. Ibid., pp. 93-95.
46. Ibid., pp. 139-141.
47. Ibid., Chapter 11.
48. Walter Williams, The Implementation Perspective (Berkeley, University of California Press, 1980), p. 102n.
49. Bardach, p. 36ff.
50. Jeffrey L. Pressman, Aaron Wildavsky, Implementation (Berkeley, University of California Press, 2nd ed., 1979), p. 134.



APPENDICES

APPENDIX A: GLOSSARY OF ABBREVIATIONS

APPENDIX A: GLOSSARY OF ABBREVIATIONS

AB 86	- California Assembly Bill 86 (Chapter 1002, Statutes of 1979), which mandated interoperator coordination
AB 842	- California Assembly Bill 842 (Chapter 264, Statutes of 1979), which called for coordination of financial planning between AC Transit, BART and Muni
AB 1107	- California Assembly Bill 1107 (Chapter 1204, Statutes of 1977), which made BART's 1/2¢ sales tax permanent and allowed portions of the proceeds to be used by AC Transit and Muni
ABAG	- Association of Bay Area Governments
AC	- Alameda-Contra Costa Transit District
AFC	- BART's automatic fare collection system
BART or BARTD	- San Francisco Bay Area Rapid Transit District
BATSC	- Bay Area Transportation Study Commission
Caltrans	- California Department of Transportation
Cubic	- Cubic Western Data, BART's provider of some AFC equipment and new pass readers for testing
Fast Pass	- San Francisco Muni's monthly pass
GGBHTD	- Golden Gate Bridge, Highway, and Transportation District
ITS	- Institute for Transportation Studies, University of California at Berkeley, a subcontractor to MTC on the UMTA project
MCAC	- Minority Citizens Advisory Committee, an advisory committee to MTC
MPO	- Metropolitan Planning Organization
MTC	- Metropolitan Transportation Commission of the San Francisco Bay Area
Muni	- San Francisco Municipal Railway
PMC	- Project Management Committee for the Southern Pacific rail services contracted by Caltrans
RTA	- Regional Transit Association of the Bay Area

Appendix E - continued

RTP	- MTC's Regional Transportation Plan
RTPC	- Regional Transit Productivity Committee, advisory to MTC
S & T	- RTA Services and Tariffs Committee
SamTrans	- San Mateo County Transit District
SB 620	- California Senate Bill 620 (Chapter 171, Statutes of 1979), which created an important new transit funding source
SCCTD	- Santa Clara County Transit District
SFPUC	San Francisco Public Utilities Commission
SP	- Southern Pacific, in this case commuter rail service linking San Mateo, Santa Clara and San Francisco Counties
TDA	- Transportation Development Act, major state funding source for transit
TOCC	- Transit Operator Coordinating Council
TSME	- Transportation System Management Element
UMTA	- Urban Mass Transportation Administration

APPENDIX B: SURVEY OF PASS PROGRAMS
IN LARGE U.S. TRANSIT SYSTEMS

APPENDIX B
NATIONAL TELEPHONE SURVEY OF
MONTHLY PASSES OFFERED BY 16 TRANSIT OPERATORS

A telephone survey was conducted during June 1981 of the sixteen largest transit systems (other than those in the Bay Area) on the basis of vehicle miles of service supplied. The informal survey was intended to provide information about base fares, monthly passes offered, and the extent of pass sales for each system. The information is current as of June 1981. A separate entry follows for each of the transit systems surveyed.

Atlanta - MARTA

Contact person: John Bates

Current fare: .50

No zones

Weekly pass: \$4.00 - unlimited rides

Monthly pass: \$17.00 - unlimited rides

of passes: 23,000-24,000 weekly passes per week
17,000-18,000 monthly passes per month

25% of revenue comes from passes

35% of patrons use passes

56 trips per pass per month

Baltimore MTA

Contact person: Mike Hannan

Current fare: local - \$.50 (may go up to \$.60 in July)
express - \$.65

5 zones	zone 2	\$.10	added to base fare
	3	.15	" " " "
	4	.25	" " " "
	5	.25	" " " "

<u>Passes:</u>	<u>Local</u>	<u>Express</u>	<u>Premium</u>
Zone 1 pass	\$18.50	\$24.00	\$29.50
Zone 2 "	22.00	27.50	33.00
Zone 3 "	27.50	33.00	38.50
Zone 4 "	37.00	42.50	48.00
Zone 5 "	46.50	52.00	57.50

When fares change, the extra zone charge will stay the same. The passes will go up \$4.00 each.

of passes sold: 37,000 total passes per month

25-30% of revenue comes from passes

22-25% of patrons use passes

48 trips per month per pass

Breakdown of passes sold in May:

	<u>Local</u>	<u>Express</u>	<u>Premium</u>
Zone 1	28,551	379	155
Zone 2	4,600	671	214
Zone 3	1,500	260	228
Zone 4	206	46	109
Zone 5	16	-	6

Boston MBTA

Contact person: Ernie Deeb

Current fare: local - \$.65
 express - 1.00
 buses - .25

Zones on rapid transit: .50 .75 1.00 (depending on distance)

Passes:

Surface buses: \$ 9.00 per month
Subway: 18.00 per month
4 combinations: will send brochures describing these

Number of passes sold: 75,00-80,000

30% of revenue comes from passes

30% of patrons use passes

38.8 round trips per pass

MBTA has a special marketing program for passes - 750 companies distribute passes and absorb marketing costs. 56 of these companies pay for the pass for their employees.

Chicago (CTA)

Base fare: \$.80
Transfer: .10

Pass Price (adult): \$35.00

Monthly Pass Sales; 120,000-135,000

20% of revenue comes from passes

Estimated trips per pass: 53-55

Cleveland GCRTA

Current fare: Local - \$.40
Express - .50

No zones

3 passes: Weekly local - \$ 4.00
Monthly local - 16.00
Monthly express - 20.00

sold: Weekly local - 4,870 per week
Monthly local - 3,300 per month
Monthly exprss - 3,200 per month

Total fares in May: \$2,228,657
Revenue from express pass: 75,657
" " monthly local: 62,326
" " weekly pass: 86,836

Percentage of patrons not available
Estimated number of trips not available

Denver RTD

Current fare: Local - \$.70
Express - 1.05

No zones

Passes: Circulator (Downtown Denver) - \$ 12
Local - 24
Express - 36
Regional - 60
Boulder only - 17

of passes sold: Circulator - 4,775
Local - 14,289
Express - 5,269
Regional - 957

35% of revenue comes from passes

% of patrons using passes: peak period - 40.79%
off-peak - 11.7 %

40 trips per pass per month

Detroit SEMTA

Contact person: Barbara Murphy

Current fare: Local - \$.60 going up July 1 to \$.75 plus .10 for transfer
Express - \$.80 " " " " " " " " "

Zones: 20¢ per zone after first 2 (8 zones altogether)

Prices:	2 zone:	\$18.00
	3 " :	24.00
	4 " :	30.00
	5 " :	36.00
	6 " :	42.00
	7 " :	48.00
	8 " :	54.00

of passes sold: February - 6,500
April - 7,200
May - 6,600

% of revenue: Farebox - 33.9%
Operating revenue - including charter & advertising 3.2%
Total revenue - including federal subsidies 2.5 %

% of patrons using passes - .57%

Houston MTA

Contact Person: Suzanne Burns

Current fare: Local - \$.40

Zones: Zone 2 - \$.50
Zone 3 - \$.60

Monthly pass:	Local	-	\$17.00	# sold	-	2,630
	Zone 2	-	21.00	"	-	2,431
	Zone 3	-	25.00	"	-	2,145

Premium service zones:

after zone 3 - \$25.00 + \$10 for each 5 mile increment

blue	-	\$25.00	915	sold	per	month
green	-	35.00	1,168	"	"	"
red	-	45.00	815	"	"	"
orange	-	55.00	760	"	"	"
yellow	-	65.00	81	"	"	"
grey	-	75.00	7	"	"	"

% of revenue from passes: 21.5%

% of patrons using passes: 18%

40 one-way trips per month

Houston MTA also sells books of tickets for same price as pass, for 40 one way trips. These are used more than passes are.

Minneapolis - MTC

Current fare: \$.50 will go up to \$.60 in July
 express freeway - \$.60 " " " " \$.70 " "

Zones: 4 zones with 10¢ increments - \$.50 .60 .70 .80
 in July .60 .75 .90 1.00

	<u>Local</u>	<u>Express</u>
<u>Monthly pass</u>		
Zone 1	\$20	\$24
Zone 2	24	28
Zone 3	28	32
Zone 4	36	

of passes sold: 39,00-40,000 per month (of all kinds)

% of revenue from passes - 35%

% of patrons using passes - 28%

%0 trips per pass per month

Philadelphia - SEPTA

Current fare: \$.65 + .10 for transfers

Zones: Outside of city only

Monthly pass: \$32.00

Weekly pass: 8.25

of passes sold monthly: 20,000

" " " " weekly: 40,000

% of revenue from passes (including weekly): 28%

% of patrons using passes: 30%

62 trips per month

Pittsburgh - Port Authority

Current fare: \$.75 + \$.25 for transfer (6-mile radius)

Zones: 12 miles to total of 13 zones. Zone 13 - \$2.65

Monthly pass: \$21.25 (each time the pass is used, the patron pays \$.10 for the central zone, and more for each additional zone)

Weekly pass: \$5.50 + .10 for each use

of passes sold monthly: 30,000
" " " " weekly: 10,000-11,000

% of revenue from prepaid fares (includes passes, tickets school passes): 30%

% of patrons using passes: not available

60 trips per pass per month

Portland TriMet

Current fare: \$.65 for 1 or 2 zones
Zone 3: \$.90

Monthly pass: \$21.00 - for 1 or 2 zones
29.00 - for 3 zones

of passes sold: 26,000

% of revenue from passes: 45%
% of patrons using passes: 50%

45-50 trips per month

St. Louis - Bi State Development Agency

Current fare: Local \$.50 in July: \$.60
Express .75 " " : .80

No zone

Monthly pass: \$30.00 (will be discontinued after July)
Commuter pass: \$ 7.00/week for express buses - limited to 10 rides

of passes sold: 900-1,000 monthly passes

% of revenue from passes: 21%

% of patrons using passes: 20% (estimated)

Bi State Development Agency will offer a weekly pass for \$8.00 -
unlimited travel on express and local

Seattle Metro

Current fare: \$.50

Zones: to county line - \$.75

Monthly pass: 1 zone - \$19.00
2 zone - \$28.50

of passes sold: Zone 1 - 25,840
Zone 2 - 8,463

% of revenue from passes: Zone 1 pass - 20.56%
Zone 2 pass - 11.65%

% of patrons using pass: 32.21%

44 trips per pass

San Diego - SDTC

Current fare: Local \$.60 will go to \$.80 in July
Express \$.75 " " " \$1.00 " "

Monthly pass: \$27.00
Express: 30.00

of passes sold: Local - 4,000
Express - 1,000

% of revenue from passes: 10%
% of patrons using passes: 15%

40+ rides per month

In July, regional pass for express and local \$31.00 only

Southern California Rapid Transit District (RTD)
(effective as of July 1, 1980)

Current fare: \$.65

Zones: Charges range from \$.30 to \$15.00

Transfers: \$.20

Monthly pass: \$26.00

of passes sold:

% of revenue from passes:

% of patrons using passes: Regular - 18%
Express - 1%
Elderly & Handicapped - 11%
Student - 9%
Total - 39%

Number of uses per pass: Regular - 87
E & H - 57
Student - 67

Washington, D.C. - WMATA

Current fares: Local - \$.50 in D.C.
Maryland: D.C. to Maryland - Zone 1 \$1.10, Zone 2 \$1.40
within Maryland - \$.60

Virginia: 4 zones - \$.60 base fare + \$.25 for each zone
intra-state: add .60 to base fare + zones

Bi-weekly passes:	Cost	# Sold
D.C. only with \$6.00 of rail:	\$11.50	28,000-29,000
Maryland only:	10.00	1,600
Virginia only with \$5.00 rail:	12.00	2,100
" 2 zone pass, " " :	17.00	4,500
" 3 zone pass, " " :	22.00	700
Maryland/D.C. with \$2.00 rail:	18.00	6,500

% of revenue from passes: Metrobus - 12%
Rail - 12%

% of patrons using passes: 20% (bus)
11% (rail)

54 trips per pass per month

APPENDIX C
MTC TRANSIT COORDINATION POLICY

ABSTRACT

Resolution No. 620

This resolution adopts as Commission policy principles of transit service coordination for regional transit fares, inter-operator transfers and modifications of connecting services. The principles include establishing a uniform regional fare structure for comparable services, standardized and simplified inter-operator transfer procedures, and better coordination of connecting services to improve the overall efficiency and effectiveness of the regional transit system. Progress in implementing these principles will be considered in the Commission's grant review and allocation function and in the Commission's review of the Five-Year Transit Development Programs of the six major transit operators.

Re: Policy on Transit Coordination - Fares, Transfers and Service Modifications

METROPOLITAN TRANSPORTATION COMMISSION

RESOLUTION NO. 620

WHEREAS, Section 66510 of the California Government Code directs the Commission to pay particular attention to the interfacing of various modes of transportation;

WHEREAS, in the San Francisco Bay Region there are six major publicly owned transit systems, each meeting the unique needs of its service area, but, nevertheless, having certain interests and concerns in common with other operators;

WHEREAS, coordination of regional transit services is necessary to maximize the Region's return on its investment in transit and to encourage more transit usage;

WHEREAS, pursuant to Section 29142.4 of the California Public Utilities Code MTC has established the Transit Operators Coordinating Council to, among other things, better coordinate routes, schedules, fares and transfers among the San Francisco Bay Region's transit operators;

WHEREAS, MTC has worked with the TOCC to develop guidelines for transit fares, transfers, and service modifications, implementation of which will improve regional transit coordination and will assist in achieving the goals of Policy 6.13 of the Regional Transportation Plan which states: "Eventual

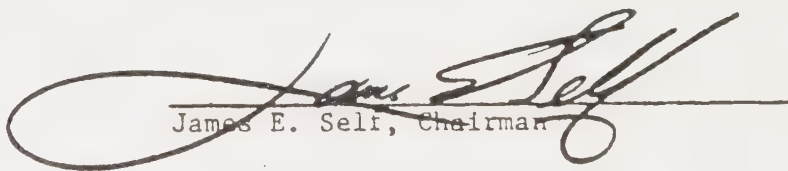
complete integration of schedules, services and fares among principal transit systems shall be fostered"; now, therefore, be it

RESOLVED, that the Metropolitan Transportation Commission adopts "Principles for Coordinating Regional Transit Fares, Transfers and Services" described in Exhibit A, attached and incorporated by reference, as policy to guide the Commission; and be it further

RESOLVED, that the Metropolitan Transportation Commission directs the Transit Operators Coordinating Council to pursue as a high priority the development of specific plans, programs and projects to implement these principles and guidelines, including the development of recommendations for the level of base fares, definitions of special user groups, and recommendations for specific fare discounts; and be it further

RESOLVED, that the Metropolitan Transportation Commission will explicitly consider evidence of progress in implementing these principles and guidelines in future reviews of claims and applications for financial support of each of the six major transit operators and in five-year Transit Development Programs.

METROPOLITAN TRANSPORTATION COMMISSION


James E. Self, Chairman

The above resolution was entered into by the Metropolitan Transportation Commission at a regular meeting of the Commission held in Oakland, California on December 20, 1978.

EXHIBIT A

PRINCIPLES FOR COORDINATING REGIONAL TRANSIT FARES

1. ✓ A uniform fare structure for the six major transit operators should be established throughout the region so that comparable fares are charged for comparable services.
 - ✓ a. The fare structure should be built upon a uniform minimum base fare for local service, with additional charges based on distance traveled, service quality and the value of the service to the traveler.
 - ✓ b. The uniform fare structure must be consistent with other MTC policies and requirements regarding the ratio of fare revenues to operating costs.
 - ✓ c. The fare levels in the uniform fare structure should be re-evaluated periodically by the operators in light of changing financial, operational and travel conditions.
- ✓ 2. There should be a single discount which is easy to administer for special user groups; and the definition of the special user groups and their eligibility should be the same throughout the region.
- ✓ 3. Discount fares are desirable for off-peak and weekend transit users.
- ✓ 4. To the extent practicable, fare payment should be required of users no more than once during a one-way trip.
5. The development of new or improved fare collection equipment should be coordinated so that it is technologically compatible among operators.

EXHIBIT A

PRINCIPLES FOR COORDINATING REGIONAL TRANSIT FARES (cont'd)

6. Services or charters for special purposes or to special destinations tend to be unique to each operator, and therefore these fares should be set on an individual basis outside the uniform fare structure.
7. These principles should be considered by each transit operator's policy board whenever fare changes are contemplated.

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